INTERNATIONAL RECORD OF MEDICINE

VOL. 173 NO. 7 WHOLE NUMBER 2929 JULY 1960

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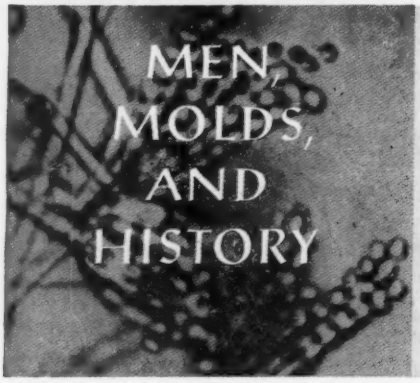

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INTERNATIONAL RECORD OF MEDICINE

VOL. 173 NO. 7 WHOLE NUMBER 2929 JULY 1960

Symposium on Medical Editing

Some Principles and Problems of Medical Editing

Hugh Clegg, M.A., M.D., F.R.C.P.

EDITOR, BRITISH MEDICAL JOURNAL

LONDON, ENGLAND

I might just as well have left the word "medical" out of the title of this article because the principles and problems of editing are just the same whether the journal edited is the *New York Times*, the *New England Journal of Medicine*, or the *Journal of the Royal Institute of British Architects*. There will be variations in different countries, but the fundamentals are pretty much the same throughout what we call Western civilization, one of whose characteristics has been a succession of struggles for various kinds of freedom. "I disapprove of what you say, but I will defend to the death your right to say it"—this statement has been attributed to Voltaire. C. P. Scott, the great editor of the *Manchester Guardian*, said: "Facts are sacred. Comment is free"—a good slogan for any editor.

AN ASSOCIATION AND ITS JOURNAL

What I shall say in this article is based largely on my 29 years' experience of work on the staff of the *British Medical Journal*. The *British Medical Journal* is owned by the British Medical Association. Receipt of the *Journal* is one of the alleged benefits of being a member of the British Medical Association. Of course, anyone can buy it, but the largest part of its 85,000 circulation goes to members of the association. The association does not set aside any fraction of the members' subscription for the *British Medical Journal*. There are many variations on this policy among medical associations that provide their members with a medical periodical.

The success and welfare of a medical—and probably of any other professional—association depend first and foremost on the existence of a well-run professional journal. Not long after the American Medical Association had been formed in 1847, those at the center of its affairs were worried because it was making little headway and attracting too few members. So the association sent a small delegation to England to investigate the British Medical Association in order to discover the secret of what the Americans thought was a successful organization. On its return

the delegation said that the success of the British Medical Association was closely linked with the success of its medical journal. The editor, Dr. Ernest Hart, then visited the United States at the invitation of the American Medical Association to help to establish the *Journal of the American Medical Association*. On his return to England Dr. Hart rather spoiled things by sending a circular to large numbers of American physicians telling them that if they wanted a good medical periodical they should buy the *British Medical Journal*.

A full-time medical editor is a professional journalist: if he is a medical man—as he nearly always is—his real profession is journalism. A medical man who takes up this work gets his training by the time-honored method of apprenticeship: he learns the job by doing it. This is how many other journalists learn the job, as one gathers by reading the monumental history of the London *Times*. Journalists' unions have tried to insist on an official training course as a necessary requirement for a post on a newspaper. But for the most part the professional starts as a gifted amateur. Full-time medical journalists have one disadvantage as compared with lay journalists: the field of operation is narrow. There are, for example, really only three or four medical journals in England that offer a worth-while career in the curious specialty of medical editing, for a medical editor is as much a specialist as a cardiologist.

Many people have written on the problems of the press and of those who serve it. For the editor, the most delicate problem is his relationship with the proprietor. An editor has the final responsibility for the printed word, whatever help he may get from others in preparing his journal or newspaper. This matter is so important that many years ago the British Medical Association decided to include in its articles and bylaws one relating to the editor's responsibility. It reads as follows:

> A Journal, under the title of the British Medical Journal, shall be published weekly in London by the Association, and shall be conducted by a paid Editor, who shall be responsible for all that appears therein, except such matters as are inserted in accordance with the Regulations and By-laws, or by direction of the Council. The Editor shall be appointed by and be subject to the control of the Council.

Whether it is wise to attempt such a definition of responsibility may be disputed, but my predecessors and I have always regarded this article as a great safeguard of editorial independence from pressure groups within the medical profession.

EDITOR NOT AN AGENT

The position of the medical editor of a journal owned by a national medical association is by no means an easy one. He belongs to the same profession and the same association as do his proprietors, who for the time being are usually the honorary—and temporary—officers and council members of the association. He is not, so to say, someone who is hired to do a certain technical job, as, for example, a business manager would be. No editor of a responsible journal, least of all a medical editor, should be looked upon or treated as a hired scribe. The late Wickham Steed, editor many years ago of the London *Times*, wrote this in a letter to a fellow editor: "By 'Editor' I mean a journalist in his own right . . . I do not mean an editorial technician chosen by a newspaper owner to advocate either the personal or the

party preferences of the owner. Such technicians are agents, not editors as I conceive editorship." Sir Linton Andrews, editor of the *Yorkshire Post* and recently chairman of the British Press Council, said this: "On a serious political paper the editor should be allowed a great deal of freedom. If, for example, he edits a Conservative paper, his opinions must be in agreement with a Conservative philosophy but should not be expected to follow always the Party line of the moment."

These statements are valuable, coming as they do from men speaking with authority. Obviously an editor of a serious paper accepts certain limitations. He does not, should not, claim absolute license to express his opinion on any and every subject on any and every occasion. Freedom is not license. If, for example, I were to publish leading articles asserting that witchcraft is more beneficial than, say, penicillin in the treatment of pneumonia, I should not be justified in complaining if my proprietors gave me the sack. If the British Medical Association's official policy is opposed to a full-time salaried service, then I should not feel I had a right to advocate a contrary policy: to set out the pros and cons of the matter would be different. "Editors," said a journalist and editor of great repute, J. Robertson Scott, "besides being news-gatherers . . . are evangelists and keepers of other people's consciences. . . ." And I would add that a medical editor has to be a keeper of the conscience of a profession, and if he tries to live up to this ideal he will always be getting into trouble. A wise old friend of mine said to me after I had been editor for two years or so: "I hope you have been getting into trouble with your bosses." "Why ever do you say that?" I asked. He replied, "Well if you haven't, it means you are not doing your job properly."

Someone once said that the world would be quite a happy place if it were not for the writers of leading articles in the daily and periodical press. A "leader," as we call it for short, is supposed to give a lead, and when it does this in no uncertain fashion many readers will dislike it. "An agreeable person," wrote Lord Chesterfield to his son, "is a man who agrees with you." An editor, unfortunately, is a focus for some people's disagreements for most of his working life, and so in their eyes he becomes a disagreeable person—but never so much as when he publishes a leading article that stirs up controversy.

EDITOR A PLURALITY

I do not know who introduced the custom of the editorial first-person plural—"in our view," "we consider," "we much regret." This plural use, together with anonymity, is what gives the leading article its force and authority. It does not matter who writes the leading article. The authority is the collective, plural authority of the editor. The anonymity increases this effect, and it brings out what should be an impersonal and detached view of the scene surveyed. I can see nothing in favor of fixing a signature to a leading article, what our American colleagues call a signed editorial. I can see many things against it. The leading article is published with the authority of the paper or journal behind it. A journal earns this position of authority largely by virtue of the leading articles it publishes. We say: "According to *The Times* . . ." or "The *British Medical Journal* says . . ."

This usage emphasizes once again the detached, almost impersonal, position of the editor. I am always astonished to find that some people believe that the editors of, for example, the *Lancet* and the *British Medical Journal* write the leading articles on clinical and scientific medicine, though this may sometimes happen. Apparently the same people think that the editors of our two great English daily papers, *The Times* and the *Manchester Guardian*, write the leaders on the many varied topics dealt with throughout the year. Foreign policy in the Middle East is as technical a subject as the inheritance of blood groups and just as difficult to understand. A newspaper editor may be an expert on the Middle East: more likely he is not and he invites an expert to write the leader on this subject. But the responsibility for the choice of subject and the choice of writer lies in the editorial department, and the final responsibility for the words used is that of the editor. Some leading articles may pass through three or four hands before they are published, and even in a highly scientific leader that awkward thing called editorial policy may raise its diplomatic head. The editor must have absolute right to modify the leading article in any way he sees fit, and he cannot surrender this right to a named leader writer. The editorial blue pencil has to be at work up to the last moment of revision.

There is another popular fallacy about editors, and that is that their primary qualification is ability to write and that their primary function *is* to write. Now John T. Delane, probably the greatest editor *The Times* ever had, apparently wrote only three or four leaders during his 36 years of editorship. As the historian of *The Times* has written: "Delane was not by nature a writer, and he never became one by practice." But as it is not easy to find medical men with a talent for writing, some skill with the pen is desirable in a full-time medical editor.

SIGNING BOOK REVIEWS

If, as I believe, there is everything to be said against the signed leader or editorial, there is everything to be said for signing book reviews. A book is a very human product. An author goes into prolonged labor before he gives birth to the child of his mind, hoping it will grow in stature and perhaps give him some financial support in his declining years. A book comes to include not only facts and theories, but the style and personality of the author, not to mention the art and craft of the printer and the publisher. Milton said, "As good almost kill a man as kill a good book . . ." But if execution is to be done it should be done cleanly, and the author, the publisher, and the reader have a right to know the executioner's name so that they can form their own judgment more clearly.

Our English poet Keats, who was a medical student at Guy's Hospital, is said to have had his end accelerated by a hostile anonymous review in a literary quarterly. Anthony Trollope, Charles Dickens, Virginia Woolf have all had nasty things to say about anonymous reviewers. Reviewers, said Dickens, are the "lice of literature." The best defense I have read of the anonymous review was itself signed—by Stephen Spender—in the *Times Literary Supplement*. He gave the game away when he said that after all a signature was "no more than that of a talented journeyman who can make a readable article out of almost anything." That is just what so many

editors of periodicals used to do and still do—send out a batch of books to a talented journeyman who can be trusted to turn out, on time, a batch of readable notices that will never offend, or excite, anyone. Many of these journeymen imitate the example of the English wit, Sydney Smith, who said: "I never read a book before reviewing it; it prejudices a man so."

Of course there are difficulties in this situation for the editor of a professional journal, especially in a country or a city where nearly everyone knows everyone else. But even then I think it is better for the critic to come out into the open. Certainly I have never regretted the decision to have book reviews in the *British Medical Journal* signed. A few years ago I was in the office of one of the medical publishers in Philadelphia. He said to me: "The first journal we look at for reviews of our books is the *British Medical Journal*." I asked him why, and he replied: "Because they are signed. If one of our books is severely criticized in a signed review in the *Journal* we know that book is not going to sell in England."

WHAT TO PUBLISH

The *British Medical Journal* is, like any similar periodical, both a scientific journal and a weekly medical newspaper. In addition, through a special supplement, it records the main activities of the British Medical Association. In other countries —for example in Holland—there is separation of these functions, and the journal owned by the national medical association is concerned solely with medicopolitical matters and does not publish any articles on clinical and scientific medicine. I think there is much to be said for making a weekly medical journal owned by a national medical association a periodical that truly reflects all aspects of medical life—scientific, clinical, medicopolitical, social. At the same time it is not easy to blend these in a mixture that is palatable to everyone.

Following an old practice, we still put first in the *British Medical Journal* signed articles on clinical and scientific medicine, original articles, 9 or 10 every week, which are getting more and more technical and scientific and more and more specialized. Gone are the days when the good, all-round clinician could manage to survey the whole of a subject in an article of 3000 or 4000 words. We receive complaints from time to time that much of what appears in this part of the *British Medical Journal* is too highbrow for the practicing physician, especially for the middle-aged practitioner who was educated in simpler times. I sympathize with much of this criticism. But what is published does, after all, represent work in progress in hospitals, clinics, laboratories, in public health, in general practice. In Britain today most of those who are on the staff of hospitals are specialists; the general physician and the general surgeon are no longer in fashion, which I think is unfortunate.

Much of what is published is inevitably of a specialist nature. It becomes more and more difficult to decide which article is suitable for a special journal and which for a general journal. One thing I am certain of—and that is, it would be a profound mistake to provide in a general medical journal solely articles of a practical nature and a profound mistake to publish scientific articles solely in specialist journals of limited circulation. I think that the general practitioner, for example,

should know through his general medical journal something of the way in which research workers are tackling fundamental problems, and of their results; and, too, that the research worker should know something of the practical interests and problems of the general practitioner and consulting physician.

What to select out of the mass of articles pouring into an editorial office is the biggest problem we have to deal with. In the long run it is upon the selection of articles to be published that a medical journal is judged—that and selection of its leading articles. We take—or try to take—endless pains in selecting the articles that are to be published. In spite of these efforts, we make many mistakes, which we hope readers will not notice, but usually they do. The great thing is to set oneself a high standard and to try not to fall below it. It is, of course, not possible for one man to be able to assess all, or even more than a part, of the papers that are submitted for publication. I should think that at least 70 per cent of those submitted to the *British Medical Journal* are read by two and probably three persons before a decision is reached on whether or not to publish. But the final decision is made by the editor, whose job it is to weigh the evidence of the experts and to take into consideration such practical problems as space and the varied interests of readers.

EDITORIAL STRESS SYNDROME

As in every other department of medicine, so in medical journalism and medical editing one never ceases to learn. Looking at the tidy pages of a medical journal, at the rows and rows of neat lines of black type exactly spaced out on them, the casual reader might think it was all done according to some simple formula worked out long ago and from which no deviation ever occurred. But behind this apparently orderly mechanism there is a lot of hard work, anxious decision, and uncertainty. There are some things one will always remember with the same pained horror one suffered at the moment of their happening. I still recall lifting up the telephone to hear the angry voice of a physician whose obituary notice we had published a day or so before. I really did not know what to say. So I began by congratulating him on being so very much alive. But the angry voice went on. It wasn't, it said, so much that the physician objected to the premature publication of the obituary notice, because, after all, like death, that too could be an accident. No. What really annoyed this man, nominally dead but abominably alive, was the fact that he objected to the publication of his obituary notice in the *British Medical Journal*, which, I regret to say, he for some reason very much disliked.

There are two other events that I shall never forget. The first was the destruction of our printer's three factories on Saturday night, May 10, 1941, during one of the worst air raids on London, if not the worst. Our printer, Messrs. Eyre and Spottiswoode, had three factories between Holborn and Fleet Street, and when we discussed risks with them in the early days of the war, their managing director always told us of his conviction that the Germans might destroy one factory but never all three. Well on that night all three were destroyed, and the type of the *British Medical Journal* and of the Bible—for Eyre and Spottiswoode was one of the printing houses licensed to print the Bible—poured down the streets of London in a stream of molten

metal. We learned of this when we arrived at the *Journal* office on Monday morning and we had to go to press on Wednesday. By Monday afternoon we had persuaded another printer to help us out of the difficulty. Fortunately we had kept proofs of everything that was set. So we went to press on Wednesday on time, although that week's *British Medical Journal* looked a bit uneven to the critical eye. The following notice prefaced the leading article: "Today's issue of the B.M.J. has been prepared and passed for press under conditions of very great difficulty brought about by the exigencies of war. Readers and contributors are asked to overlook imperfections in the Journal as now printed in a different type-face and to understand that much current material is perforce missing.'

Our next excitement was in the fuel crisis of February, 1947. There was complete chaos, and if my memory is right, even those printers who might have been able to print journals were not allowed to do so.

We were the only weekly periodical in Britain that produced some kind of an issue in the weeks ending Feb. 22 and March 1, 1947. Two sides of a sheet of foolscap constituted the *British Medical Journal* for each of those two weeks, with our cover device stenciled on the front. They were "printed" on duplicating machines, the Gestetners and the Roneos, of British Medical Association House, and some 52,000 copies were posted in time to reach what we hoped would be an army of expectant readers.

The opening article of the issue for February 22 was entitled "By Candlelight," and it was in fact by candlelight that for the first and last time but one I wrote a complete issue of the *Journal* and subedited the advertisements for vacancies so as to bring the announcements down to an irreducible minimum of words. We had a leading article of 19 lines on "Coal and Medicine." We were also able in the news to correct an advertisement that had appeared two weeks before. The correction read thus: "Advt. B.M.J. Feb. 1 wrongly stated price London Aberdonian's dinner (18s.) including wines. Aberdonian Secretary alarmed at mistake and demands for tickets." We christened these two issues of the *Journal* the *Pemmican* numbers.

SAD BUT TRUE

Whether sad or sensational, professional or political, literary or legal, a journal will inescapably be stamped with the personality (or lack of it) of the editor. It is a sad fact but true, and has to be faced with the same fortitude needed to look at one's face in a mirror. Anyone of mean intelligence can collect material for a magazine and, with the aid of printer and publisher, put it all between two covers. But however high the gloss of the paper, and however wide the margins of the page, the periodical will fail to make any impact on the reader if it is not informed and shaped by a mind that knows itself—and preferably also its own limitations. For better or for worse, an editor and his journal are, or should be, inseparable till retirement, resignation, or death do them part.

The Care and Cultivation of Scientific Manuscripts

Newton Bigelow, M.D.

EDITOR, THE PSYCHIATRIC QUARTERLY

UTICA, N. Y.

The compulsion to engage in medical writing is probably not a single psychiatric entity, or even two or three syndromes. But an editor of good clinical acumen, given the unadorned fact that Ignatius Otto Le Blanc Jones, M.D., is in the prodromal stages of a manuscript, will easily predict the forthcoming symptomatology. Unless the condition is detected early and remedial measures are taken promptly, the sequelae are likely to include a badly confused script, disoriented statistics, and either an autistic or distracted, but in any case inaccurate, reference list.

The reactions of those who deal with scientific manuscripts being as predictable as those of people who write them, I had intended to call this contribution, "How Not to Write a Scientific Manuscript," until I recalled that Hans Selye had published a distinguished discussion under the title of "How Not to Write a Medical Paper" in the first symposium of this series.* Doctor Selye discussed the fundamental problem of making and setting down observations, then drawing conclusions from them—dealing with seven specific fallacies or "traps of reasoning." It is proposed here to take up the problem that follows the successful evasion of Doctor Selye's traps, to discuss the procedure after a sound piece of experimental work, or a sound series of clinical observations, has been completed.

One of the earliest of the newspaper comic strips—almost 50 years ago—concerned a couple of absent-minded professors. One carried a book entitled, *What to Do*, the other a volume on *How to Do It*. Doctor Selye's discussion covered what and what not to do, and some of the how and how not to do the what; this article will concern the how after the what is a *fait accompli*.

How not to do this how is fairly simple. In the first place, don't plan the paper; in the second, dictate it, and don't read it over afterward; in the third, delegate someone else to prepare your tables; in the fourth, have your secretary do your reference list from your notes, and don't read that over afterward either. If you are fortunate enough to be a senior author, it will also simplify your work a lot to have a junior author perform such chores as collating your case notes or reviewing the literature. This list is not exaggerated. As an editor, I receive manuscripts daily in which one or more of the "how-nots," and sometimes all of them, have been carefully observed.

In the second of these symposia on medical writing, John F. Fulton remarked, in connection with the preparation of bibliographic references, that "formal instruction is seldom given in this basic part of scholarship . . ."† This is a point to which I shall return—with some bitterness of spirit. It is mentioned here because formal instruction seems to be given very seldom in any phase of scientific communication.

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* Symposium on Medical Writing, Internat. Rec. Med. & G.P.C. *168*:616, Oct., 1955.

† Symposium on Medicine and Writing, Internat. Rec. Med. & G.P.C. *169*:710, Nov., 1956.

Perhaps statistics should be excepted, but thorough instruction in the preparation and use of statistics is all too often restricted to the statistician, another matter to be discussed later.

The journal of which I am editor has paid earnest, if somewhat sporadic, attention to the problem. Some years ago, we were exasperated enough by a collection of badly written manuscripts to engage in a heartfelt complaint.* We observed that "scientific writing is a technique, a trade, or an art, in itself—and nobody seems to take the trouble to teach it, or at least to teach it properly and see that the teaching sticks. . . . Writers, like doctors, are not born that way, but made. We think intensive courses in scientific writing in our graduate schools and postgraduate training could raise the level of scientific journals materially . . ."

That discussion and this one are based on a premise that seems self-evident to me: that a piece of research or a clinical observation is of value only to the man who makes it unless he can communicate it to others accurately and intelligibly. Neither the spirit of medicine, nor that of modern science in general, can condone the doing of scientific work for the sole benefit of the worker; if it proves to be worth doing, it is not only worth communicating; there is a duty to communicate it. We are not now teaching the young physician, or as far as I know, the young scientific worker in any other field, how to communicate properly. And outside the halls of learning, any attempt to do so, including this one, is likely to seem less like teaching than scolding.

We cannot all be great writers, scientific or any other kind. The ability to express oneself brilliantly in words on paper appears to depend on a variety of inherited and environmental factors that range from whatever the intelligence quotient represents to a certain sublimation of both voyeuristic and exhibitionistic tendencies. But almost anyone of average intelligence, let alone the above-average intelligence required for graduation from medical school, can learn to write, if not brilliantly, at least clearly and accurately. Some of the rules are to set down as simply as possible what one observes, to avoid ambiguous expressions, to eschew involved sentence structure, to abstain from unfamiliar words, and to shun the use of expressions and constructions that will bring the reader to pause while he figures out what the writer means. Admittedly, many scientific concepts are complex, but if the best the writer can do is something the reader will have to go over more than three times (and scientific manuscripts are full of such things), the writer would do well either to start all over again or to restudy the subject to see if he understands it himself.

The good scientific article, like the good general article, must give certain basic information. Conventionally, a piece of description or a piece of reporting is supposed to give answers to the questions: "Who?" "What?" "Where?" "When?" "Why?" "How?" If this seems too elementary to repeat, it can only be said that it is an unusual manuscript that covers these fundamentals satisfactorily. "What?" is almost invariably the most important question for the scientific paper to answer, although all editors can recall contributions that have failed to explain "What?" at all. And most manuscripts could stand some repair work when the question is

* Editorial: The editor's schnozzle, Psychiat. Quart., 24:821-830, Oct., 1950.

amended to "Precisely what?" In psychiatry, for instance, one frequently comes across discussions of short psychotherapy that do not specify the type—dynamically oriented, or supportive, or Adlerian, or whatever. The answer to "Where?" is often omitted from a medical paper, sometimes carelessly, sometimes, one supposes, in a misguided effort to preserve the patients' anonymity. The answer is often unimportant indeed until some reader wants to pursue the matter further, perhaps by repeating an experiment, when he will find it necessary to know whether the original paper comes from an exclusive private hospital, a research center, or a Veterans Administration institution. The patients' anonymity can be preserved without omitting essential background.

"When?" is, of course, important as showing perhaps that the paper reports something before or after the introduction of antibiotics or, in psychiatry, ataraxics. It may ill become an editor whose journal, like many others, is overwhelmed with manuscripts requiring time-consuming study and is far behind its publication schedule to emphasize the further importance of "When?" But when a new method, or even a question of priority, is concerned, time is again an important question, and it is only fair to editors to say that they try to give precedence, in consideration and publication, to papers for which the time of publication is important.

In a medical manuscript, "Who?" is the question of who the subjects, or the patients, are, or in a laboratory experiment, it may be what the subjects are. It is also a question of who the authors are. Are they laboratory workers, teachers, clinicians? Often, the only information volunteered to the editor consists of names, frequently without degrees, and the use of "I" or "We," which the conscientious, old-fashioned editor frequently changes to the third person on the theory that the writer should not intrude his personality between his subject and his reader.

"How?" and "Why?" form the bulk of discussion of most papers. The warning for the novice writer is to stick strictly to his observations in answering "How?" and to write cautiously and without jumping to conclusions in discussing "Why?" Both observing the "How?" accurately and answering the "Why?" soundly are matters of general scientific method that come more within the scope of Doctor Selye's topic than within mine. My concern is that accurate observation and sound conclusions be reported adequately.

If this discussion thus far sounds like telling the third grade to form its letters carefully, I decline to blush, for inexperienced writers always leave one or more of the six key questions unanswered, and experienced writers often fail to answer them all. Yet there is a simple trick that will make sure all are covered: Start with a filing card for each question and check them off as they are covered in the manuscript. For a simple report, the cards may even serve as an adequate outline.

The intelligibility and readability of a scientific report involve more factors than completeness and good organization of its material. They depend on an accuracy that is seldom regarded as more than an ideal to which one pays lip service. Most scientific people have joined in more than one chorus to the effect that, "You can't believe what you read in the newspapers. They misunderstand the facts; they misspell names; they misquote; they garble; they make mistakes in figures." Then the scientific critic himself writes a paper in which he betrays a misunderstanding

of facts, misspells names, misquotes, garbles, and confuses his figures. He is, in fact, less reliable as a rule than the newspapers he criticizes, for journalists work with swords over their heads; they may lose their jobs for serious misrepresentation or mistake, especially if somebody is damaged thereby and brings suit for libel. The scientific writer is liable to little suffering for his inaccuracies beyond the pain of receiving a polite note of rejection.

If the scientist's mistakes and misapprehensions are published, neither he nor the journal that publishes his article is likely to be materially damaged; his error may even kill someone without his ever hearing of it. He does not face the threat of swift personal retribution that confronts the unscientific journalist. So the scientist, who of all the world should show the highest sense of responsibility, is likely to show little. The medical scientist has completed at least a required minimum of sound, satisfactory, accurate reporting of research or clinical observation, or he would not have his doctor's degree. He seems to feel less responsibility when he is writing for professional colleagues who may make use of his work in their practice than he felt in writing for his medical school faculty. So he submits material that no respectable school (or no respectable newspaper, for that matter) would tolerate for a moment. He misspells and misuses the simplest English words; he misspells anatomical and physiological terms (and in psychiatric writing, psychiatric terms); he misspells drug names and garbles chemical formulas; his writings are replete with ambiguity.

No editor expects any writer to be immune to error; if writers in general were, there would be far fewer editors, for it is the editor's job to detect error. But it is the writer's preliminary job to detect gross and careless error. If he cannot spell—and everyone is aware that, because of the vogue of the look-and-guess system of teaching reading, there are many professional people in their twenties and thirties who cannot spell—he can find a younger or older person who has learned how to spell to correct his spelling. Or unpalatable as the chore may seem, he can use the dictionary; editors, who generally do know something about spelling, use the dictionary constantly.

If the writer has dictated his paper, or set much of it down from memory, the least he can do before submitting it is to verify the spelling and the usage of scientific terms; he may refer to medical dictionaries, drug lists, and drug labels, as well as general dictionaries. In these days of new medications, a simple oversight here can create a knotty problem for an editor. The user of a new drug can find out how to spell it—from the distributor if necessary. It can take hours of editorial time here to correct a trivial error that an author could have corrected in two minutes. The retort that such a paper should never have been accepted, or should be returned to the author in any case, is not valid. The paper may, and probably does, concern an apparently sound piece of work on an important subject. It may be half-edited before inconsistencies in misspelling—two versions, say, of the same name—arouse the suspicion that all is not well. Publication may not only be urgent on general principles, but urgent for the particular issue of the particular journal for which the article is scheduled. So the editor, not the author, must solve the problem.

The trap hidden in faulty transcription of dictation is a real one. I recall editing

a symposium in which a discussant asked an author if he had "ever tried interviews for the treatment of alcoholism." This almost made sense—but not in this context. And one does not willingly make a colleague look silly. This one had not seen the stenotype notes. When he did see them, the question proved to be not about interviews, but about Antabuse. Mix-ups of such near-homonyms are part of an editor's daily puzzle-solving. He can often, usually in fact, correct such mistakes by studying the context, but he should not have to; the responsibility is properly the author's.

Considerations similar to the foregoing are involved when an author lacks familiarity with the English language or is not too comfortable in writing it. He may be lured, for instance, into too free use of cognates, but "grand," "*grand*," and "*grande*" have different meanings in English, French, and Spanish. The exodus from Hitler's Europe of 20 years ago brought some of the finest scientific minds in Europe to the United States. We all welcome them, but the editor who has no *Deutsch* must still, at times, with an English vocabulary in the purest German syntax, cope. He faces similar problems with authors whose backgrounds are Russian, Scandinavian, or Hungarian; even the more familiar sentence arrangements of the Romance languages can be puzzling at times. It would be of vast help sometimes if an author who is in doubt would consult a colleague whose native tongue is English.

The reverse of the coin presents much more obscurity and involves considerably more uncertainty and considerably more work. Certain foreign words are parts of the medical, and in particular the psychiatric, vocabulary; and sometimes citations should be given in their original language as well as in translation. The American writer is likely to display a fine, cavalier disregard of foreign spelling, and of the silly foreign habit of using diacritical marks—umlaut, tilde, cedilla, circumflex, Hungarian "dagger." It should not be necessary, but it is, to remark that an accent omitted is a word misspelled, or something worse. In Spanish, leave the tilde off *año* (year), and you have *ano* (politely translated as anus). Géza Róheim finally dropped the "daggers" in his name, but until he did so, their omission was discourtesy at the least; and, even when he dropped them himself, the omission invited mispronunciation.

This brings up the question of citations, references, and bibliographies, in my opinion one of the two worst problems with which the editor has to struggle (the other is statistics). The one indispensable rule in making a citation or bibliographic entry is to copy accurately and fully enough for the reader's use. It is a simple matter of writing on reference cards and seeing that the notation gets into the manuscript unchanged. The amount of irresponsibility in this regard continues to astound me. A reference with a typographical error may be picked up from another author and perpetuated. A good many years ago, I encountered an instance of this that I have always thought of as the ultimate.

The citation (with its appropriate reference) was made in a paper reviewing a large literature; it was to two French writers whose names were given as Lasègue and Farlet. Something about "Farlet" seemed wrong. One can call this feeling intuition, or a subconscious memory, or an unduly suspicious nature, but "Farlet," which can be broken up into two perfectly good English words, did not seem like a French name, although I have been assured since by native Frenchmen that it easily

could be. At any rate, the author rechecked it and found it was actually a misspelling that had been copied by one medical writer after another for 30 years or so. The name was actually Falret, which I should say hastily I had not remembered consciously in spite of Falret's eminence a century ago. Any Freudian can have fun speculating as to why the transposition was originally made—by translator, printer, or stenographer. What appalls is the revelation, made after years of copying and recopying, of the extent of general failure to verify references. The editor, incidentally, feels there was some excuse for the author in this case; he was doing little more than listing authorities, and Lasègue and "Farlet" were well-recognized authorities by this time!

There are other pitfalls in reviewing the literature. The author himself can be victimized. I have in mind an early paper, submitted some years ago by a writer who has since become recognized as a sound and reliable worker. It also involved a review of the literature, which seemed impressively complete. The paper was accepted and had been edited and put into type when there was a frantic letter from the author. He was teaching a graduate course, and he had assigned some of his students, a not uncommon practice, to do some of the research on which he had based his paper. Somehow, he had discovered at the last minute that he was the victim of a hoax; some of his best references were to the wholly imaginary work of wholly imaginary people.

The nonexistent perfect editor of a perfect scientific journal would be able to spot bibliographic mistakes instantly and unerringly, because the perfect editor would know everything or, at least, like Andrew Lang's Prince Prigio, French and "German, high and low, And the names of the mountains in Mexico." But the usual mistake—and mistakes are usual—in bibliographic material is not spectacular; it is quiet, sneaky, altogether unobtrusive; it may involve a wrong volume number, a mistake of a year or two in date (these are very common), or a misspelling of a technical or foreign word. I have heard of a mistake—incidentally undetected or at least uncorrected for years—in which author's name and title were transposed in a foreign book list. (Readers of the language presumably said to themselves, "How odd that Brain Tumor should be writing about John Smith," but nobody did anything about it.)

Errors of this sort go undetected because no editor can know, or remember accurately, all the scientific literature on every scientific subject that may concern his journal. The best he can do is to be alert for clues—and check or ask for verification whenever a clue seems to point to something wrong. This process cannot catch all or even most errors, and I have no illusions that the reference lists in my journal are perfect. They could be improved in editing only at a material increase in editorial costs. I am told of one journal in a field allied to ours that employs a large university library (or perhaps a research worker in a large university library) to read and verify all its reference lists.

Most journals cannot afford to spend large sums to detect contributors' unnecessary mistakes, and they ought not to be expected to do so. I have already referred to Fulton's paper on bibliographic citation. It is an excellent guide to the compilation of a practically perfect bibliography, and anyone capable of reading and

following directions should be able to do so. A person with a scientific education and a fair supply of common sense should also be able to compile an adequate and accurate citation list even without Fulton's instructions. That so few actually do seems to me to indicate a woeful lack of responsibility. There are places and circumstances where ordinary human mistakes are simply not tolerable. They are not tolerable in a medical article, on which health or life may some day depend. We know what would happen to a pharmacist who mistakenly put arsenic instead of aspirin in a prescription. For the man who puts "psychoneurotic" into a reference list instead of "pseudoneurotic," the penalty should also be severe.

The other great area of almost undetectable mistakes is statistics. The editor ordinarily can tell when a statistical procedure is misused; he can detect errors in arithmetic, and he knows something is wrong when he finds himself tripping over mathematical ambiguities. But he is seldom a statistician himself, and he cannot always call a statistician into consultation whenever he receives a paper with a table in it. Furthermore, even the statistician can be fooled by appearances. A statistical procedure appears sound; a table seems properly arranged; it is only when the actual process of editing is under way that it becomes apparent that figures in the text do not correspond to those in the tables. If a statistician himself writes a paper, it can be assumed safely that he has done the statistical work with the utmost care. But it cannot be assumed safely that he has reported this work accurately. My journal has received professional statistical work in which carefully weighted and adjusted figures were presented in the text and raw figures given in the tables. Like the man whose secretary prepares his reference list, the statistician had asked an assistant to prepare the tables.

If the professional statistician can do things like this, the achievements of the amateur—and most scientific writers are amateurs in statistics—can be virtually indescribable. The *Psychiatric Quarterly* recently paid its respects to the amateur statistician in an editorial entitled (in the hope that someone would read it): ". . . and the Son of a Bitch is Four."* The thesis was that the small boy who came home from school to horrify his mother with this garbled version of "the sum of which is four" had grown up to become a garbler of medical statistics.

The problem of statistics is too complicated for adequate discussion here, but careful observation of a few basic, common sense principles would improve ordinary medical statistics enormously. In the first place, if the writer has the slightest doubt, he should consult a statistician about procedure or research design and the way to report statistics before he involves himself in a statistical project. It is easier for the author to get some general advice than for an editor to repair a botched job. It is also vastly pleasanter than to have an otherwise satisfactory paper rejected because of half-witted statistics. In the second place, the writer should see that what he does present is presented simply and clearly. He should, for example, specify on what base his percentages are calculated, and note every time his base changes; when he writes of an average, he should specify whether it is a mean, a median, or a mode. If he mentions statistical significance, he should specify the

* Editorial: ". . . and the Son of a Bitch is Four," Psychiat. Quart., 32:840-853, Oct., 1958.

measure of significance. If he draws up a table, he should have someone else read it, to see if it is intelligible, before he submits it for publication.

Finally, whether professional or amateur, the writer should read over the statistics in his manuscript before he submits it; one of the most easily made typing mistakes is to strike the wrong digit, "3" for "2" or "0" for "9." To correct this sort of thing, the editor must duplicate the author's figuring.

There are a number of excellent books on elementary statistics; the scientific writer should have one handy—and consult it often. A little consultation and a little care on the part of the author would improve medical statistics greatly and relieve medical editors of a burden they never should be asked to carry.

This whole discussion has been—purposely—very elementary. It is my belief as an editor that the poor quality of most scientific manuscripts (and most are poor as manuscripts, however excellent the work they report) is caused by disregard of the elementary rules, not of science, but of writing. Yet the writing of a satisfactory scientific report is a comparatively simple matter. It is a question of observing a few rules, rather than of innate ability. If innate ability enters the problem at all, anyone with the intelligence to get through medical school has at least the necessary minimum of ability. Training and practice in writing are most desirable; one cannot do the best kind of writing, scientific or otherwise, without both. Learning and observing the elementary rules outlined here can substitute reasonably well, however, for formal training. Anyone who has ever written a satisfactory thesis in graduate school can write a satisfactory scientific article if he applies his native intelligence—and a sprinkling of horse sense—to the job. It is the sprinkling of horse sense that is usually lacking.

Of course no amount of effort and practice will turn every medical writer into a Claude Bernard or a Sigmund Freud or an Oliver Wendell Holmes, each of whom was recognized as a master of his native tongue, aside from his medical eminence. All the editor hopes for is intelligibility, dependability, and some degree of organization. The editor expects to take care of faulty punctuation, staggering syntax, and misuse of words; those are some of the things he is there for. He also knows that mistakes in reporting are inevitable; he is not simple enough to hope for perfection or even to believe that when mistakes are made he can detect them all. But he does think that the contributor should do more than heap up a pile of poorly checked observations, stir in a handful of English, pepper with random punctuation, and smear the mess on his pages.

Perhaps someone in my own specialty will think it worth while some time to inquire into the mental processes that lead a person to undertake and complete a difficult piece of scientific work and then defeat himself by perversely failing to use the diligence, intelligence, and skills he possesses in reporting it. Be this as it may, we are concerned here with lesser, more normal degrees of carelessness, lack of appreciation of the editorial situation, and incomplete training. The remedy lies at hand. The level of scientific writing could also be raised significantly if medical writers who reach the point where the sprinkling of horse sense is needed would simply trouble themselves to sprinkle it. It should require the taking of only a little thought.

How I Edit Medical Manuscripts

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The manuscripts that I receive are sometimes accepted for publication, sometimes rejected. If they are rejected, I never touch them with my editorial pencil. If a manuscript is accepted, I invariably notify the author immediately by letter and I tell him that his article has been accepted subject to editorial modification. If the manuscript is an exceptionally good one, I may say subject to "slight editorial modification." But always, and I believe this has occurred with every manuscript that has ever passed under my desecrating hands, I can find the need for the editorial pencil or pen.

I do not touch the title of the paper until after all the other editing has been completed because as editor I will know better at the end just what the title ought to be. The title should indicate succinctly and clearly the subject of the manuscript. I make sure that the author's name is spelled as he would wish to have it spelled and that the titles under his name are limited to those that are most important. Seldom is more than one title necessary—at most two. If there is a footnote indicating that the paper was read before a scientific organization, the data should be complete, properly cited, and used only as a footnote, not at the head of the article.

Some medical periodicals now list a second footnote indicating the date on which the manuscript was received. Most medical periodicals are already so far behind with publication of manuscripts that they prefer to make a note of this date for their own records and not publish it.

The opening sentences of a manuscript should, like the opening sentence of a speech or an address, capture the audience. For this reason, in most instances I am called upon to eliminate an opening paragraph or even two opening paragraphs that the author himself has written. Frequently he finds difficulty getting into his subject. Since it is the subject primarily that interests the reader and not the various reasons why the author decided to write on that subject, the paper properly begins with the immediate discussion of the basic material.

The time has long since passed when an author needs to review the entire literature of any medical subject in contributing a manuscript to a periodical. In fact, few periodicals indeed have space for such complete reviews of the history of any medical subject. No doubt even the historical journals prefer discussion of only limited phases of a subject rather than an entire review.

The opening paragraphs of many manuscripts are like the opening words of many sentences. They constitute a running start. The author is not sure just when he wants to take off, so he fills the intervening space by verbiage and comes finally to the take-off.

I have just finished editing a manuscript on diarrhea. The author began: "Diarrhea is a common complaint of both ancient and modern man and is a complicating factor in many conditions dealt with by practicing physicians." I changed this sentence to read: "Diarrhea is a symptom, not a disease."

The author continued: "In any discussion of diarrhea it is necessary to emphasize that the condition is not diagnostic of any disorder." This I changed to read: "Diarrhea is not diagnostic of any disorder."

I have previously emphasized my abomination of the running start. Here are a few such running starts taken from this manuscript that I have been editing: "It should be emphasized that . . ." "It has long been recognized that . . ." "In studying . . ." "It has been suggested . . ." "It should be noted that . . ." "It has been concluded that . . ." "It appears that . . ."

Most of the publications with which I am associated have manuscript editors. These are usually well-trained students of English composition with a knowledge of grammar, spelling, punctuation, and similar technical details. They take the responsibility for checking most of these things. However, as I read the manuscript, I invariably give some attention to all of these points and I am not above changing a word if I happen to think of a better one. For instance, I may come to a sentence that reads: "Diarrhea is more prevalent in females than males." Automatically I change that to: "Diarrhea is more prevalent in women than men."

Frequently I split a sentence that is too long into two sentences and eliminate the conjunction.

I dislike the too frequent use of "it is" and "there is" to begin sentences. I like smooth-running sentences that have the sound of dignity. One author wrote: "He succeeds in whatever he is in." I changed this to read: "He makes a success of any endeavor that he undertakes."

I have just eliminated some typical medical jargon from a manuscript. The author wrote: "This clinical picture is that of a rather well-defined syndrome which has appeared during the last 20 years." I changed the sentence to read: "This well-defined syndrome has appeared during the last 20 years."

After the first editing and reading, I am likely to go over the manuscript a second time to check the headings and subheadings into which the manuscript is divided. If the author has not done this sufficiently or successfully, I myself insert the necessary headings and subheadings that will make the reading of the manuscript more effective.

THE SUMMARY AND CONCLUSIONS

Finally, I read most carefully the summary of the article and the conclusions. In most instances the summary may be adequate but in a majority of cases the conclusion is either a repetition of the summary or a philosophical discourse that goes far beyond what has been established and set forth in the manuscript.

LENGTH

An editor must be concerned with the length of a manuscript. If the paper is too

long, condensation may be brought about by eliminating the protocols of experiments, by the use of tabulations instead of innumerable case reports, by the elimination of unnecessary pictures, and by various other techniques with which editors must become familiar if they do not wish the publisher to become bankrupt.

An editor learns, if he can learn, by experience. If he does not learn, he should turn his talents to some other purpose.

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Editorial Viewpoints

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NEW YORK, N. Y.

The word "editor" has more than one meaning, but all of them derive in the last instance from a single source, the Latin word *edere*, to give out. From this origin, the word "editor" appeared in the seventeenth century to designate one who gave to the world or published some kind of written or printed matter. This original sense is still retained in *éditeur*, the French word for publisher, and in *Herausgeber*, its German counterpart. In the course of the subsequent two hundred years, the task of publishing or issuing printed matter gave rise to a number of related terms. Thus, by 1712, an editor was not only a publisher but also one who prepared a text or other material for publication. "Editorship" appeared in 1782 to designate the duties, functions, and office of an editor, in short, editorial supervision. It was at about this time too that the verb "to edit" began to be used. Approximately one hundred years later, in 1864, the term "editorial" was introduced to designate a newspaper article or expression of opinion written by, or under the direction of, the editor.

Despite the revolution produced by the introduction of printing with movable type, printing and therefore editing remained simple. About a half century ago, when the invention of typesetting machines accelerated the composing of type, the manufacture of printed matter changed from the simple routine of the old-time printer to a complex process involving machines, a wide variety of different type faces, and a multiplicity of personnel concerned with the task of preparing material to be published. As a result the term "editor" is today bestowed on a variety of people all of whom work on material to prepare it for publication, and who have various responsibilities for manuscripts, proofs, and ultimately for the printed article or book. Thus, a magazine with a mass circulation will have an editor-in-chief, a managing editor, associate and assistant editors, contributing editors, and numerous others. In short, the initially simple and unified task of giving out printed matter has been subjected to a division of labor. Not all editorial offices have such an elaborate division of function, yet in some degree it will be found wherever periodicals or books are published.

While I recognize the existence of this division of labor, the following remarks will not deal with all editorial workers. Anyone interested in this broader subject may consult a useful paper by Richard M. Hewitt of the Mayo Clinic, in which he attempts to analyze the tasks of medical editing, or an older book by J. Eidesheim, which describes the work of a manuscript editor.[1, 2] My comments deal with the point of view and the task of the chief editor and are based on my experience over the past 22 years in editing several periodicals and in acting as editorial consultant to various organizations. At present, I am the editor of the *American Journal of Public Health*, the official organ of the American Public Health Association, a position that I consider it a privilege to hold.

Yet the privilege carries with it a definite responsibility. The editor's job is to offer his readers in clear, readable English material that is interesting, timely, or new. For this purpose he can rely on the flood of words that pours yearly into the office of the *American Journal of Public Health*. In addition, he can stimulate authors to contribute papers on selected subjects. The editor then faces the task of selection, of picking those manuscripts that are suitable for his journal.

Every year I read scores of papers, a very large number of which I reject. What are the criteria for acceptance or rejection? Three for acceptance have already been mentioned: new knowledge, timeliness, and interesting presentation. But other considerations also enter the final decision. Length is one. Space is limited, even in a journal that appears monthly and generally does not publish monographs or review articles. For such a publication, a manuscript must be of moderate length, between 4000 and 5000 words at most. Some papers will be shorter and this characteristic is obviously no hindrance to publication. Greater length is justifiable if the author has something very pertinent to say, but brevity is definitely not a fault. Finally, there are criteria of language and style.

An editor reads a manuscript to appraise its value in terms of its technical content, to detect the weaknesses and the strong points of presentation, and to judge the skill, or lack of it, in the use of language. The basic thing that can be asked of an author is that he should know whereof he writes, that he should be aware of the meaning of what he writes, and that he should present his knowledge and understanding as clearly and as strongly as he can. The editor's job then is to see that the writer, if he has something worth saying, can be read and understood. Yet, as Alan Gregg pointed out a number of years ago, "the common level of medical and scientific writing in our professional books and journals already constitutes the most serious internal limitation to medical education and research."[3] Writing and language merit more attention, but before proceeding with this topic, a characteristic of public health must be mentioned because it has a bearing on the content of the *American Journal of Public Health*.

As a field of activity, public health cuts across a number of scientific disciplines and professional groups. Among the members of the American Public Health Association are physicians, dentists, nurses, sanitary engineers, nutritionists, statisticians, administrators, health educators, and numerous others. There are specialists in epidemiology, preventive medicine, occupational health, maternal and child health, tuberculosis, venereal disease and other communicable diseases, cancer, heart disease and various noncommunicable diseases, environmental sanitation, and many other areas of knowledge and *expertise*. Clearly a journal with such a diversified audience must endeavor to keep some degree of balance in its content. One cannot overload such a journal with material from only one or two technical areas.

Above all other considerations, however, stand the criteria of worth-while content and mode of presentation. These criteria must be used as ruthlessly as one can in the face of the enormous pressure exerted by the desire of so many authors to be published. An amazing number of persons write and strive to be published because the physical fact of publication is important to them. In the academic world, "a man's prestige in his discipline is often measured by the number of citations he

receives from other authors," but to be cited he must have been published.[4] The logical consequence therefore is to publish or perish—and few wish to perish.

Furthermore, in the rush to publish, padding and jargon are often employed to make up for a paucity of content. Inadequate attention is given to the meaning of words, and the influence of careless speech in daily life casts a long shadow on much scientific and technical writing. This does not mean that technical terms should not be used. On the contrary, there is a legitimate use for a specialized vocabulary that can be employed for precise and economical communication by experts in a given field. This is one reason for the use of mathematical language in certain branches of science. The fact is that technical terminology is like all language in that most words have several meanings or shades of meaning, that these tend to change in the course of time, and that new words or old words with new meanings are bound to come on the scene. Any editor must learn to accept this fact of life. At the same time, such recognition cannot be used to excuse sloppy writing that results from fuzzy thinking, or from the employment of denatured language acquired from textbooks and learned treatises, or from a combination of these factors. The editor must endeavor to offset the corrupting effects of such influences, for as Sheridan stated so succinctly and forcibly: "Easy writing's vile hard reading."

No one expects an article on a subject in public health or medicine to be a contribution to belles-lettres, and indeed few are. Some authors seem to have accepted Mark Twain's description as more appropriate, and offer "here and there a touch of good grammar for picturesqueness." The fact is that good writing is rare, and is rarely produced spontaneously. This harsh fact cannot be ignored. The truth is that one has to work to achieve simple, clear writing, the kind of prose that reads effortlessly. Furthermore, the ability to write the simple, straightforward English that one would like to see in so many manuscripts is not necessarily connected with either intelligence or schooling.

Samuel Johnson once pontificated that a woman preaching was much like a dog walking upright. "It is not done well," he said, "but you are surprised to find it done at all." One need not accept Johnson's view of women preachers, but his illustration does apply to many who try to write for publication. Manuscripts are often written in a clumsy, awkward style, not because people are stupid, but because they have not thought about their writing, because they have not actually considered the meaning of workmanship and quality in good writing.

How can a paper on a technical or scientific subject be accepted for publication if the phrasing is vague and ambiguous, or if words are incorrectly used? An author may claim that the reader will know what he means, and in some instances he may be correct. Yet one can counter this argument with the more pertinent one that a professional journal is not trying to test its readers for extrasensory perception. A truthful statement must be based on accurate perception and precise expression. And it is at this point that the editor can be most creative. As far as possible the editor endeavors to remove causes of misunderstanding while disturbing the organization of the manuscript as little as possible, if this can be done. Many times this aim cannot be attained, and the manuscript is returned to the author with a critical commentary and suggestions for revision. Such disappointed authors may feel as

William Hazlitt did about an editor whom he detested: "He inclines, by a natural and deliberate bias, to the traditional in laws and government; to the orthodox in religion; to the safe in opinion; to the trite in imagination; to the technical in style; to whatever implies a surrender of individual judgment into the hands of authority, and a subjection of individual feeling to mechanic rules."[5]

Such antagonism is, of course, an occupational hazard, and most editors learn to live with it. The fact is that not many people like to have their creative efforts pulled apart, even when this is done circumspectly. Yet anyone can, with a certain amount of effort, improve his style of writing. In this sense, an editor must be a teacher and help an author, by suggestion and example, to develop a manner of writing that will convey the author's intended meaning accurately and effectively.

Finally, one can only reiterate, good writing depends on clear thinking and adequate command of one's language. The former depends on one's knowledge of a subject, the latter on practice in writing. An editor must assess the evidence presented by an author, but he can do it so much more easily and more judiciously if he fully understands what the author means.

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Oral Polio Vaccine Tests Started

The National Foundation has announced that the oral poliomyelitis vaccine, developed by Dr. A. B. Sabin, will undergo the first field trials in this country in Houston, Cleveland, and New Haven, in collaboration with medical schools at Baylor, Western Reserve, and Yale universities. The Sabin vaccine has been used extensively in field trials in Russia during the past three years, with more than 10 million doses having been administered. Results are said to be highly encouraging.

Are Medical Textbooks Essential to Medical Education?

Russell L. Cecil, M.D.

NEW YORK, N. Y.

Fifty years ago American students of medicine obtained a large part of their medical education from textbooks. This was the case in both the fundamental and clinical courses. Medical education was still in the "dark ages" when knowledge of disease was imparted in great measure in lecture rooms or amphitheaters. The teachers were mostly practitioners who devoted only a few hours a week to teaching students, and who had to contend with meager laboratory facilities and inadequate access to sick patients either in the ward or in the outpatient clinic. It would be difficult for the modern medical student to realize how primitive medical teaching was in those days in a vast majority of the so-called proprietary medical schools. The situation was better in some of the great university medical colleges, but these were exceptional.

Around 1900, medical schools lacked the handsome endowments with which they are blessed today. The teachers were amateurs and received little or no salary. Lectures were usually prepared from textbooks rather than from a rich background of clinical experience, and because of this purely theoretical approach, teaching was uninspired and nonauthoritative. How well I can recall the hours we students spent, sitting on very hard seats and listening to the drone of our poor professors who were probably just as bored as we were! In addition to the lectures there were quizzes from assigned pages of textbooks. Week by week we plowed through these large tomes until every disease had been covered.

At Johns Hopkins University new and more practical methods of teaching medicine were being introduced. Indeed, the rebound from the purely "theoretical" to the more glamorous "practical" approach produced a sort of intoxication in both teachers and students. I always liked the story of a Johns Hopkins student who while taking his state board examinations encountered a request to describe the symptoms and diagnosis of amoebic dysentery. His reply was: "I'm sorry; I have never seen a case!" I can't remember whether this bright young man received a passing mark or not.

Around the turn of the century, Osler introduced the system of clinical clerkships at Johns Hopkins. He had seen how well it was working in the English medical schools. Fourth-year students were assigned to medical wards where several patients were given each of them for diagnosis and treatment, all of course under the supervision of the resident and the visiting physician. This personal contact with a sick patient gave a tremendous stimulation to the student's enthusiasm and curiosity about disease. He needed his textbook at hand for ready reference, but he also needed to refer to important original articles, doctor's theses, and monographs when he wanted to understand some obscure or unusual medical problem.

Many students became deeply interested in research through these channels, and important basic investigations came about from this search for knowledge in original

sources. Perhaps it was because some medical students leaned too heavily on their textbooks that professors of medicine advised them not to go to textbooks for knowledge, but to delve deeper into the medical library and try to get a point of view much broader than a textbook could possibly give them.

Dr. Osler's famous textbook of medicine was published about 1890, and soon became the standard textbook for American students and practitioners. Certainly, Dr. Osler, who was the outstanding medical educator of his generation, must have thought well of medical textbooks or he would not have written one!

It is interesting to speculate why certain medical textbooks lose their vogue while others maintain their popularity for many decades. This is largely a matter of regular and adequate revision. Medical books have a short life if they are not frequently revised. My own textbook of medicine (now by Cecil and Loeb) was planned with the idea of multiple authorship and complete revision every four years. Contributors are retired at the age of 65; this regular infusion of fresh blood, so to speak, keeps the text fresh and original and in intimate contact with newer ideas in medical practice. The modern medical textbook, in order to be of the greatest help to the student, must be authoritative and it will be so only when each field or subject is covered by an expert. In my opinion the day of textbooks by a single author is over. No matter what the field, anatomy, physiology, medicine, or surgery, more than one brain is needed in order to cover the entire subject. Furthermore, we have discovered that more than one editor is necessary for a textbook of internal medicine.

In my textbook, I had always had assistance with the section on nervous diseases, but when I asked Dr. Robert Loeb of the Presbyterian Hospital to become coeditor for the eighth edition, we soon found that we had to have three associate editors, three stalwart "musketeers" who took a considerable part of the editorial burden off the shoulders of Dr. Loeb and myself. These hefty helpers were Dr. Walsh McDermott, Dr. Alexander Gutman, and Dr. Harold Wolff.

Since the first edition of the book appeared in 1926, several other authors of textbooks of medicine have followed our lead, notably Harrison and Meakins, and have adopted the policy of multiple authorship. Harrison introduced a new note when he separated the physiology and biochemistry of various diseases from the formal clinical discussions and had separate chapters on the physiology of pain, respiration, circulation, etc., which were grouped together in the early part of the book before the diseases proper were described. Unfortunately, these chapters occupied a considerable part of the available space, and this necessitated some abridgment of the section on disease proper.

Meakins introduced a new feature when his textbook appeared with profuse illustrations, many in color. We followed suit in our textbook rather reluctantly. Again it was a matter of space, valuable space that was sorely needed for introducing new material and new diseases in the text.

In our latest edition we have eliminated many illustrations that seemed unnecessary, such as photographs or drawings of pathological specimens, in order to make room for essential additions to the text. We felt that the student could always refer to his textbook on pathology for such illustrations.

One of the great satisfactions we have had is the wide use of our book in foreign

medical schools. I believe there are translations now into six languages. One of the great surprises, however, is the number of foreign students who use the original English text. I recently asked some medical students from Chile why they preferred the English text to the Spanish translation, and they replied: "Oh we know English very well. We go to see American movies every night!" I suspect there was an economic reason as well. The Spanish edition is in two volumes and therefore much more expensive. The Chinese have the choice of either English or Chinese texts, both pirated I believe.

Textbooks of medicine are planned primarily for medical students. But practitioners need them for reference too. I have been amused to note, however, that the Cecil and Loeb textbook in the physician's bookcase often bears the date of an early edition. A first edition of our book may have some value a hundred years from now, but it is not very useful at the moment as a reference book!

Physicians as writers vary widely in their facility in the use of the English language. Medical men write better than surgeons. Professors of medicine have a better literary style than practitioners. After 35 years of experience, I am still amazed at how good-natured physicians are, and how cheerfully they accept the editor's blue pencil. In rare instances articles for my textbook have been almost completely rewritten without arousing more than a mild protest from the writer. A few have bristled when reminded of the automatic retirement age of 65, but surprisingly few at that.

One of the unique features of the Cecil and Loeb textbook is its multiplicity of authorship. Dr. Frederick Price of London edited a textbook of medicine, which was published in 1922, four years before the first edition of our book made its appearance. Each section of his book was covered by a different contributor, 25 in all. Our first edition was the product of 130 contributors; the ninth edition contained material from 172 contributors. There were several advantages to our system, the chief one being that it was easier to persuade a man to write a short article than it would have been to get him to write a monograph for someone else's book. Then too, having a large group of contributors simplified the problem of revision every four years. As some one put it, the book took on some of the attributes of a *Yahresbericht*.

Every author or editor is much interested in book reviews from foreign and domestic medical journals. As a rule the reviews of our book have been favorable. One of the early reviewers noted a certain unevenness of both style and quality in the articles. This was a fair but inevitable criticism; however, we have tried to overcome this fault in subsequent editions.

Certain articles sometimes receive unfavorable criticism that is justified. However, each contributor has only a limited amount of space for his contribution, and this may necessitate certain omissions or curtailments that limit the coverage of the subject.

We have had almost no attacks on a favorite target for criticism, namely, the index. We have always tried to make the index as complete as possible. As a result it covers one hundred of the total 17 hundred pages.

In closing, we might again ask ourselves the question, which was the title of this

article, "Are medical textbooks essential to medical education?" As editor of a textbook of medicine, which over the last 33 years has had a large and constantly growing circulation and which has been translated into six foreign languages, I think we must assume that textbooks are still essential to medical education. It would be hard to measure the influence that a book like ours has had on medical education over the last 30-odd years, but it must have been considerable.

The methods of teaching medicine will undoubtedly change as new ideas and new techniques in pedagogy are developed in university circles, but always there will be need of authoritative treatises on every aspect and every field of medical knowledge. Just how long any one textbook will survive will depend largely on the skill and industry of those who control its destiny.

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Low-Dosage Kanamycin Therapy in Chronic Urinary Tract Infections

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Data resulting from the conference on basic and clinical research on the new antibiotic kanamycin,‡ under the auspices of the New York Academy of Sciences in 1958, and that available from the Seventh Annual Symposium on Antibiotics in 1959 indicated the potential acceptance of this antibiotic. Ichikawa[1] and Dube[2] reported that it produced generally favorable results and was fairly well tolerated in a series of urinary tract infections. The active urologist is constantly on the alert for newer drugs in the treatment of chronic urinary tract infections, since the incidence of resistant strains of bacteria is constantly increasing. Laboratory reports support the contention that kanamycin is bactericidal for most of the organisms encountered in urinary tract infections, with the probable exception of *Pseudomonas aeruginosa* and the enterococci. Despite the anticipated resistance of ambulatory patients to intramuscular treatment as compared with the usual oral medication, a series of patients with chronic urinary tract infections were selected and placed on a regimen of kanamycin therapy.

METHODS AND PROCEDURES

A group of 60 patients were selected for treatment with kanamycin on the basis of the presence of urinary symptoms and pyuria and usually, also, on the basis of the isolation of microorganisms, either gram positive or gram negative, but primarily gram-negative bacteria resistant to other antibiotics. For various reasons, however, only 35 of these patients completed the regimen of therapy. Each patient received a complete urological check-up to establish the presence or absence of obstruction and foreign bodies. This included a cystoscopy and pyelography as a minimum, with cystometrography, urethroscopy, or urethrograms as indicated. Prior to the initiation of treatment, urine taken aseptically was submitted to the laboratory for isolation and for study of susceptibilities of organisms, especially to kanamycin. Kanamycin therapy was limited to the group of patients whose infections were resistant to sulfonamides as a minimum, and most often these infections were also resistant to a variety of other antibiotics. Bacterial susceptibility was used as a guide. Previous experience with other antibiotics had demonstrated that a patient may show a favorable clinical response in the face of an apparently resistant bacterial strain as indicated in laboratory testing. Therefore, candidates selected for kana-

This study was supported in part by a grant from Bristol Laboratories, Syracuse, New York.

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† Director, Sias Laboratories, Brooks Hospital.

‡ The trade name of Bristol Laboratories for kanamycin is Kantrex.

mycin therapy also included several patients with infections resistant in vitro to kanamycin as well as to various other antibiotics. All patients under therapy had pyuria usually associated with one or more of the following organisms: *Staphylococcus aureus*, *Escherichia coli*, *Aerobacter aerogenes*, *Proteus* species, *Ps. aeruginosa*, and enterococci. Repeat specimens of urine were taken when practical to show bacterial response during and after therapy. For the well-being of female patients, in certain instances, when a follow-up urine showed no microscopic evidence of pyuria, catheterization was omitted and the urine was considered free of organisms. Subsequent follow-up substantiated this procedure.

Since many of the patients were not hospitalized, blood and urine levels are not considered in this series.

DOSAGE REGIMEN

Most of these patients received from 500 mg. twice daily to 500 mg. three times daily for eight days. All patients therefore received a total dosage not exceeding 12 Gm. This is arbitrarily designated as a low-dosage regimen since most patients apparently can tolerate up to a total of 18 Gm. in the presence of normal blood urea nitrogen or nonprotein nitrogen levels.

RESPONSE TO THERAPY

The term "clinical improvement" is defined as symptomatic improvement associated with reduction of pyuria, with or without the persistence of bacteria. "Clinical cure" is defined as elimination of symptoms associated with absence of pyuria, even though bacteria may persist. "Bacteriological cure" is defined as complete absence of pus and bacteria in urine for a minimum of three months. In cases of chronic urinary infection, the incidence of bacteriological cure is normally low regardless of associated clinical improvement or clinical cure. In this series there was good correlation between bacteriological and clinical cures.

One of the most striking findings was the rapid symptomatic relief of acute and subacute infections. In chronic infections the patient generally reported relief of symptoms in a matter of one to two days as compared with a period of a week or more in other forms of therapy.

From this group of 35 patients treated with this regimen of kanamycin, 17 were reported as clinically cured and an additional 15 reported as clinically improved. In 3 there was no change. In most instances there was no relapse for at least three months and in several instances for four to five months after therapy was terminated. In 3 instances the original organism was apparently eradicated from the urine only to be superseded by other organisms necessitating other forms of therapy. (See table I.)

Of the 17 patients considered clinically cured, the organism apparently was eliminated in 14. From 1 of these, however, no organism was isolated initially. Of the 3 patients apparently cured clinically but not bacteriologically, 1 still demonstrated enterococci and 1 *Ps. aeruginosa*. In the third, *A. aerogenes* was eliminated but a beta *Streptococcus* appeared. Of the additional 15 patients showing clinical improve-

ment, only 6 demonstrated bacteria-free urine, and from 1 of these no organism had been isolated initially. Of the 3 patients demonstrating no change, 2 had infections of *E. coli* resistant to less than 50 μg./ml. of kanamycin, while 1 patient had a mixed infection of *Proteus mirabilis* and *Ps. aeruginosa*, each resistant to less than 50 μg./ml.

It is interesting to note that of 6 cases where *A. aerogenes* was associated with the urinary tract infection, in each instance the organism was apparently eliminated after the course of therapy. The high incidence of response to kanamycin was also noted by Lattimer et al.[3]

SIDE EFFECTS AND DRUG TOLERANCE

On the regimen employed, the over-all incidence of undesirable side effects associated with kanamycin therapy was low. In these cases there was no evidence of anemia, leukopenia, or crystalluria. Nausea, gaseous indigestion, abdominal distress, and general weakness were rare. In most patients kanamycin was well tolerated. Although there were 3 cases of diarrhea (2 mild and 1 severe), the regimen of therapy was not interrupted. At local sites of injection there was absence of pain and local tissue reaction with 1 exception. In 2 cases hematuria associated with oliguria and eighth nerve toxicity were encountered.

DISCUSSION

In dealing with ambulatory patients with many of the chronic urinary tract infections, the anticipated difficulty in acceptance of kanamycin, which required intramuscular injection, did not materialize. It is a factor, however, in ensuring completion of a regimen. The rapid response in alleviating or eliminating symptoms as well as pyuria resulted in failure of several patients to complete the course of therapy (eight days). This at times resulted in a relapse because of inadequate treatment, thus necessitating omission of such patients from this series. In those patients completing the regimen of kanamycin therapy and responding favorably, there has been no evidence of relapse for periods of from three to six months and even longer. Particularly encouraging was the favorable response of the 6 patients infected with *A. aerogenes*, which was apparently eliminated in each instance.

A phenomenon usually observed with the use of other antibiotics was also noted with kanamycin therapy. Only about one third of the patients demonstrating clinical improvement (reduction of symptoms and pyuria) also showed elimination of the bacteria. Whether a higher dosage (more than 1.5 Gm./day) would have favorably increased this ratio is problematical.

Preferably, candidates for kanamycin therapy, particularly those with chronic pyelonephritis, should be hospitalized. Here daily urine sediments should be examined for casts, red blood cells, or other evidence of renal irritation. Also, an accurate measurement of fluid intake and output should be established to obtain early detection of possible oliguria. This is especially important where blood urea nitrogen, nonprotein nitrogen, and renal function tests suggest low reserve kidney function. A patient with sustained elevated nonprotein nitrogen may be prone to nephrotoxicity and secondarily develop elevated blood levels of kanamycin conducive to

TABLE I

Low-Dosage Kanamycin: Clinical and Bacteriological Response

Patient (Sex)	Diagnosis	Organism	Kanamycin sensitivity*	Response: Clinical†	Response: Bacteriological‡	Side effects
R. A. (F)	Pyelonephritis, left, associated with ureteral stricture	*E. coli* *Ps. aeruginosa*	S >100	Improved	*Ps. aeruginosa*	None
W. A. (M)	Urethroprostatitis, nonspecific	*Staph. aureus*, enterococcus	R R	Cured	Enterococcus	None
J. B. (M)	Subsiding cystitis, bladder calculus	*Ps. aeruginosa* *P. mirabilis*	50 50	Unchanged	*Ps. aeruginosa* *P. mirabilis*	None
V. B. (F)	Chronic pyelonephritis, urinary incontinence, uremia	*A. aerogenes*	3.2	Cured	0	None
C. C. (M)	Nephrolithiasis, chronic cystitis, urethral stricture	*E. coli*	S	Improved	*E. coli*	None
H. C. (M)	Chronic cystitis with bladder diverticulum	*P. mirabilis* *P. morganii*, *Ps. aeruginosa*	S S R	Improved	*Ps. aeruginosa*	None
K. C. (F)	Urethrocystitis, recurrent	No organism, pyuria	—	Slightly improved	0	None
V.C. (M)	Postprostatectomy pyuria, associated with upper urinary tract dilation	*A. aerogenes*	<10	Cured	0	Soreness at site of injection
G. E. (M)	Nonspecific subacute urethroprostatitis	Enterococcus	>100	Cured	0	Severe diarrhea and fever for 7 days directly after kanamycin
R. E. (F)	Chronic interstitial cystitis	*Staph. aureus* (−)	0.039	Improved	0	None
J. F. (F)	Chronic cystitis with bladder diverticulum	Enterococcus	>100	Cured	0	None
A. G. (M)	Subacute prostatitis and cystitis	*A. aerogenes*	S	Cured	0	None
C. G. (F)	Chronic interstitial cystitis	*A. faecalis*	<10	Improved	0	None
H. G. (F)	Chronic pyelonephritis, lower ureteral stricture, secondary anemia	*E. coli*	50	Cured	0	Hematuria, oliguria, uremia, elevated nonprotein nitrogen, complete deafness, dizziness
B. I. (F)	Recurrent cystitis, subacute retention	*A. aerogenes*	12.5	Cured	beta *Streptococcus*	None
E. K. (F)	Chronic urethrocystitis	*E. coli*	<10	Cured	0	"Gassy feeling"
G. L. (F)	Subacute cystitis, urethral diverticulum	*E. coli*	50	Unchanged	*E. coli*	None
A. Ma. (M)	Postoperative cystitis after bladder tumor removal	*Ps. aeruginosa*	>100	Improved	0	None

Continued on Page 449

TABLE I (*Continued*)

Low-Dosage Kanamycin: Clinical and Bacteriological Response

Patient (Sex)	Diagnosis	Organism	Kanamycin sensitivity*	Response: Clinical†	Response: Bacteriological‡	Side effects
A. Mi. (M)	Chronic pyelonephritis in solitary kidney	*E. coli*, enterococcus, *P. mirabilis*	S R R	Improved	*E. coli*	None
C. M. (F)	Chronic pyelonephritis	*A. aerogenes*	6.25	Improved	0	Headache, dizziness
E. M. (F)	Chronic urethrotrigonitis	A few enterococci	S	Cured	0	Dizziness
G. M. (M)	Chronic pyelonephritis, nephrolithiasis, uremia	*Staph. aureus*		Improved	*K. pneumoniae*, enterococcus	Hematuria, oliguria, swelling, and cramps in joints, deafness, right ear
R. N. (M)	Acute prostatitis	No organism, pyuria	—	Cured	0	None
W. N. (M)	Subacute urethrocystitis	*P. mirabilis*, *E. coli*	S S	Cured	0	None
F. O. (F)	Right pyelonephritis	*E. coli*	<10	Cured	0	None
R. O. (F)	Chronic interstitial cystitis	*E. coli*	S	Improved	Enterococcus	None
C. P. (M)	Chronic cystitis with carcinoma of prostate	*P. mirabilis*, enterococcus	S R	Improved	*Ps. aeruginosa*, *P. mirabilis*, enterococcus	None
G. R. (F)	Subacute pyelonephritis, hydronephrosis	*E. coli* *Ps. aeruginosa*	50 >100	Cured	*Ps. aeruginosa*	None
M. R. (F)	Subacute pyelonephritis in solitary kidney	*A. aerogenes*		Cured	0	None
A. S. (F)	Chronic interstitial cystitis	*P. mirabilis*	S	Improved	0	None
G. T. (F)	Chronic urethrocystitis	*E. coli*	50	Unchanged	*E. coli*	None
S. T. (F)	Subacute pyelonephritis	*E. coli*, *P. mirabilis*	50 (S) >100 (S)	Cured	0	Slight diarrhea
C. W. (F)	Chronic cicatrizing pyelonephritis, left, hypertonic neurogenic bladder, megalobladder	*E. coli*	25	Improved	0	Diarrhea, nasal stuffiness (oral administration only)
M. W. (F)	Acute hemorrhagic cystitis, hydronephrosis, right	*E. coli*	S	Improved	*E. coli*	None
W. W. (M)	Chronic urethrocystitis, stricture of ureter	*P. mirabilis*	R	Cured	0	None

* Tube dilution value, when determined, in μg./ml. S = Sensitive; R = resistant, by agar diffusion technique, to 30 μg. Sensi-Disc.

† Cured = Pyuria and symptoms eliminated. Improved = Pyuria and symptoms markedly reduced.

‡ 0 = Culture not taken, but urine microscopically clear.

eighth nerve toxicity. In other words, for certain patients with chronic pyelonephritis, especially those not hospitalized, kanamycin may be hazardous.

Over-all, however, kanamycin is an excellent drug, highly bactericidal, practically free of side effects, generally well tolerated, and rarely productive of cross-resistance with other antibiotics.

SUMMARY

1. Of a series of 35 patients with urinary tract infections treated with kanamycin, 91 per cent were considered cured or improved clinically.

2. In 14 of the 17 patients cured clinically, the organism was apparently eliminated.

3. In only 6 of 15 improved patients was the organism eliminated.

4. The incidence of side effects was generally low with dosages up to 1.5 Gm./day for eight days.

5. Preferably, patients with chronic pyelonephritis should be hospitalized for kanamycin therapy rather than treated on an ambulatory basis.

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Hepatitis Increase During 1959

Figures released by the U. S. Public Health Service show an increase in both infectious hepatitis and homologous serum hepatitis during 1959 with a nationwide total of 23,187 cases reported. There was no ready explanation for the increase; the total was nearly 50 per cent above the figure for 1958. No particular areas of the country had unusually heavy outbreaks.

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TREATMENT OF CANCER. Of 29 patients with carcinoma treated in a general hospital with triethylenethiophosphoramide (Thio-Tepa, Lederle), a polyfunctioning alkylating nitrogen mustard derivative, beneficial effects were noted in 9 cases, including neoplasms of the breast, ovary, tonsil, cervix, thyroid, pharynx, skin, and reticuloendothelial tissue (AM&CT 7:226, 1960). Toxic effects include bone marrow depression and generalized visceral hemorrhages and ecchymoses. The drug is a useful adjunct in the palliative care of advanced neoplasms, but caution must be observed in its use.

THYROID DISEASE TEST. A new latex-fixation slide testing procedure speedily detects the precipitin antibody associated with Hashimoto's disease (chronic lymphoid thyroiditis) and primary myxedema. The test is marketed as TA-Test by Hyland.

EMOTIONAL DISORDERS IN GYNECOLOGY. In a double-blind study of 100 gynecological and obstetrical patients with a variety of emotional disturbances associated with childbirth and the menopause, a high percentage of results was obtained by the use of the phenothiazine thioridazine (Mellaril, Sandoz) (Quart. Rev. Surg., Obst. & Gynec. 17:44, 1960). Most of the patients who received this drug experienced relief of emotional distress and were restored to a calm outlook and emotional stability. There were no side effects other than transient drowsiness in 3 patients.

PROCAINE INJECTIONS. Injections of procaine in areas beyond the immediate surgical incision relieved the pain of long-lasting, distressing neuralgia after thoracotomy in 12 patients (West. J. Surg. 68:19, 1960). Restoration of the patients' physiochemical and endocrinological balance were essential to the treatment. All patients in the series remained free of distressing and continuous pain up to two years.

THERMOGENIC AGENT. A preparation designed to produce sustained warming of cold hands and feet contains niacin and glycine in a palatable sherry wine base (Geriliquid, Lakeside). The drug is said to warm extremities through thermogenic action of glycine and long-term vasodilation by glycine and niacin.

PERNICIOUS ANEMIA. The oral method for treating pernicious anemia is no longer recommended by the U. S. Pharmacopeia

Anti-anemia Advisory Board, according to a recent announcement. The new Pharmacopeia, which will be released in the fall, is expected to drop all such oral preparations from its listings in favor of vitamin B_{12}, which is administered parenterally. The announcement states that parenteral vitamin B_{12} is completely adequate and reliable, while oral preparations are less predictable because of individual variations in absorption.

MUSCLE SPASM RELIEF. A new ataraxic and skeletal muscle relaxant (Trancopal, Winthrop) provided marked relief of muscle spasm and pain in 84.9 per cent of a series of 304 patients with torticollis, low back pain, bursitis, fibrositis, myositis, rheumatoid arthritis, and osteoarthritis (Current Therapeutic Res. 2:1, 1960). The drug was exceptionally safe, and in addition to relieving spasm and pain, with subsequent improvement in movement and function, the drug reduced restlessness and irritability in a number of patients.

X-RAY TABLE. Motorized spot film units are fully automatic on a new radiological table (marketed as Aristocrat 11 X-Ray Table, International General Electric Co., New York City). Convenient switches permit the operator to control all factors without recourse to the main control unit; cassettes are transferred automatically from fluoroscopic to radiographic functions. The table can be tilted downward 15 degrees and upward a full 90 degrees.

CORRECTION OF ATRIAL SEPTAL DEFECT. Successful correction of atrial septal defect in 5 patients, aged 60 years or more, was accomplished by use of the atrial-wall method or the open approach with extracorporeal circulation (New England J. Med. 262:219, 1960). In the past, surgical correction of this congenital defect in elderly patients has not been stressed, but it is clearly indicated in the presence of a large pulmonary blood flow and other significant symptoms.

NEW PSYCHODYNAMIC AGENT. Recently introduced for the treatment of emotional disturbances is methaminodiazepoxide (Librium, Roche). In low dosages the drug is indicated for mild to moderate anxiety and tension; in higher dosages, it is of value in chronic alcoholism, agitated depression, and ambulatory psychoneuroses. Distinctive features of the drug include fast action, ability to relieve anxiety without sedating effects or clouding of consciousness, and effectiveness in obsessive-compulsive patients. The drug is reported to have a wide margin of safety; occasional side effects include ataraxia, drowsiness, or impairment of mental alertness.

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IN MEMORIAM

Gregorio Marañón

J. Martínez Díaz, M.D.

HEAD OF CLINIC AT THE INSTITUTO DE PATOLOGÍA MÉDICA DEL DR. MARAÑÓN, AND DIRECTOR OF BOLETÍN DEL INSTITUTO DE PATOLOGÍA MÉDICA

MADRID, SPAIN

"When my generation embarked on its labors, embracing the modern attitude toward the clinic and toward clinically applied research, our predicament was much like that of Robinson Crusoe, who had to be his own hunter, cook, carpenter, teacher and critic." Such was the state of Medicine in Spain when Marañón arrived on the scene, as he described it in his book, *Twenty Years of Labor.*

New at the time was the field of Endocrinology, to which he devoted a good portion of his inexhaustible intellectual curiosity, guided largely by intuition, for then, as now, discovery was a matter of almost divine chance.

In a memorable series of lectures delivered in Madrid's *Ateneo* in 1915, Marañón outlined the entire endocrinological philosophy. Its magnificent fulfillment, in which many participated, but which was the constant preoccupation of Marañón and his school, came later and was attained without any basic changes in the framework his genius sketched.

Marañón himself revealed the basic secret of his astonishing achievements, of which Medicine formed the foundation and made possible all the rest, when he avowed that he was part of a noble generation, which, like a poet, was endowed with a soul that constantly sought to renew its own springtime. And poets are not simply those who write verse, but also those who make poetry out of the vibrant stuff of their very existence and their dreams, and who, over the years, possess the prodigious ability to lead through those dreams others who are incapable of dreaming.

Marañón found glory without searching for it; his aim was simply to serve destiny, and great men, those who respond to higher destinies, never put a price on their heroism nor give a thought to what is to come afterward. It was the same with Cajal and his school, and so it was with Marañón's school, despite the fury of the violent storms, which did not succeed in diminishing its enormous prestige right up to his death.

As very few others, he felt in his very being the sorrow of Spain and nothing can give us a clearer understanding of his profound Hispanic sentiments than this sorrowfulness. He delighted in the austere Castillian plateau, cradle of his homeland; in the soft and gracious Andalusia; the lush greenery of the North; the parched brown of Estremadura. This love for his homeland more than once led him to wander through Spain with almost mystic passion. To the very last he fought to ennoble his homeland and, above all, her universities, for as its universities are, so is a nation. He crusaded to displace existent stultifying conditions with others in which his country might reach glorious heights, for he was convinced that it was

impossible for Spain herself to attain greatness until her universities became truly great, and he knew that there were lacking no human resources for the task.

No sharp demarcation can be drawn between the man and his work. Without the man, his work is inconceivable, for the man and his labors are one and the same. All forms a single entity and one facet explains or inspires another; this was precisely his nature. The most impressive aspect of his character was his personal bearing, which transmitted an almost magical impression of confidence and gave him enormous charm.

The Institute of Clinical Pathology, which he founded in 1927, and which gained official acclaim on two occasions (in 1931 and again on its anniversary in 1957), has earned almost universal prestige, to the extent that all intellectual leaders from abroad, whether physicians or not, always used to call on him there in his work center when they passed through Madrid.

But I rather fear that the spirit of Penelope, which, in my opinion, best defines Spain's own, may lead to the disappearance of this center of his devotions before long, with even its name obliterated, its memory uprooted.

His visits to clinics and universities outside Spain always created a tremendous impact; this hour of sorrow at his death has given them new meaning and may even lead to new discoveries on the part of the vast public, which always only partially appreciated his true worth.

He leaves a staggering number of works, including a large number of monographs and volumes of endocrinological and general medical interest. Among the most outstanding of these are: *A Study of Addison's Disease; Growth and Its Alterations; Manual of Etiologic Diagnosis*, the last-named having been translated into many languages. Claiming a large share of his efforts during his last 15 years was the *Boletín del Instituto de Patología Médica*, which he founded to augment the clinic's modest budget, whose principal source up to that time was Marañón's own unstinting generosity, plus a private donation or two. The success of this modest journal has been phenomenal and, allowing for material differences, can only be compared with that of the bulletin of the Mayo Clinic.

My own association with Marañón and his school has lasted more than 36 years, beginning as a student and then as collaborator, since, fortunately, I belonged to the same profession that he most enjoyed and to which he devoted the greater part of his energies, content that those three long hours each week were the most fruitful of his dedicated mission. And they were exactly that, because, even though there were better teachers than Don Gregorio (as we liked to call him), he radiated the tender ideal of his preferred vocation, complete dedication to the welfare of his fellow man, without which Medicine, regardless of how scientific it might be, would amount to little. This dedication to his fellow beings ran through all his teachings, which were always infused with infinite tenderness.

Another wonderful and daily lesson was his attitude toward the hopelessly ill, who frequently were of little instructional value: he always attended them with kindness and generosity and for this reason they always flocked to him. Truly moving was his tenderness and tactfulness in reassuring unfortunate mothers that their deformed offspring might surely attain the hoped-for normality.

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This lesson, revealing his unbounded devotion to his fellow man, is, in my opinion, the best possible illustration of his illustrious life.

One of his last lectures, delivered on the occasion of the fiftieth anniversary of his professorship, is overflowing with generosity, kindness, wisdom. He accepted the eventual "socialization" of medicine, calling it a "universal reform which has taken centuries of wars and revolution to bring about, for the great human catastrophes almost always entail consequences which those who unleash them cannot foresee.

"One of the most far-reaching results of World War II, which no one could have predicted, has been the 'socialization' of medicine, at least insofar as the recognition of its importance and the universality of its scope are concerned. This unforeseen consequence, as befits a matter of unquestionable justice, cannot be undone, whatever may be its initial imperfections or excesses, for these will be corrected in everyday practice."

With life's race almost run, his victories behind him and the turmoil of impetuous youth stilled, the noble calmness remained: this calmness and moderation are but another of the many lessons that we had so many opportunities to learn from the master.

SYMPOSIUM ON MEDICINE AND WRITING

The Symposium on Medicine and Writing that appeared in the November 1956 issue of INTERNATIONAL RECORD OF MEDICINE has been published recently as a Monograph. The articles included in this Monograph are: "The Editing of a Modern Medical Textbook" by Russell L. Cecil; "Plain Talk and Clear Writing" by Morris Fishbein; "The Principles of Bibliographic Citation" by John F. Fulton; "The Art of Communication" by Joseph Garland; "On Writing a History of Medicine" by Douglas Guthrie; and "Minerva and Aesculapius: The Physician as Writer" by Félix Martí-Ibáñez.

This 72-page Monograph is sold for $3.00. As the fourth in the series of MD International Symposia, this book is the companion piece of *Medical Writing*, which was published in May 1956.

To obtain this monograph, write to MD Publications, Inc., 30 East 60th Street, New York 22, N. Y.

Gregorio Marañón, M.D.

Biographical Sketch

Born in Madrid, May 19, 1887, where his father Manuel was a municipal judge, Gregorio Marañón spent most of his youth in Santander on Spain's north coast. He read voraciously in his father's extensive library, digesting volumes of Spanish literature and history, Greek and Latin classics. Santiago Ramón y Cajal's classic *Rules and Advice on Scientific Investigation* helped influence his decision to study medicine. In 1909 he earned his doctorate with high honors, married Lolita Moya, daughter of a noted Spanish journalist, and left for Germany to continue his studies.

There Dr. Marañón worked with Paul Ehrlich testing the revolutionary salvarsan, which he promised to try on smallpox and exanthematous typhus when he returned to Spain. In Madrid six months later, he joined the staff of the Hospital Provincial and took on additional duties in the infectious diseases department to carry out Ehrlich's wishes.

For the next 14 years he divided his time between pathology and endocrinology, moving to the latter almost exclusively when the department of infectious diseases was transferred to another hospital. In 1931 he established the Institute of Medical Pathology and created a chair of endocrinology, which he occupied for many years.

Though he played a decisive role in overthrowing the monarchy and was a member of the Constituent Assembly that drew up the constitution for the Republic in 1931, Dr. Marañón afterward remained on the outer fringes of politics. When the Spanish Civil War broke out, he went into exile and remained abroad, lecturing in Uruguay, Argentina, Chile, Peru, and other parts of Latin America, until 1943. After the war he was allowed to return to Spain and he resumed his life in Madrid.

On March 27, 1960, Dr. Marañón succumbed to a heart attack in Madrid.

Dr. Marañón was among the first in Europe to recognize the full significance of hormones, and in 1919 he gained world-wide attention for his pioneering treatment of endocrinal changes in middle life and his then revolutionary concept of the male climacteric. His endocrinological studies included description of a previously unrecognized form of Basedow's disease.

Dr. Marañón had a total of more than 1500 published works. He wrote 63 books, translated 18, wrote forewords for 141, published more than 334 articles and monographs, and presented more than 349 papers before scientific conferences and scholarly gatherings. Among his many honors were the following: member of the Spanish Royal Academy of Medicine (1922), French Legion of Honor (1934), member of Spain's Royal Academy of Language (1934), member of the Royal Academy of History (1936), member of the Royal Academy of Science (1947), member of the Academy of Moral and Political Science, president of the Spanish Geographical Society.

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Dr. Winfred Overholser Receives Two Honors

Winfred Overholser, M.D., Superintendent of Saint Elizabeths Hospital, Washington, D. C., and Editor-in-Chief of the *Quarterly Review of Psychiatry and Neurology*, was recently the recipient of two honors. He received the President's Award for Distinguished Federal Civilian Service and is the first psychiatrist to whom it has been given. Dr. Overholser was also awarded the honorary degree of Doctor of Laws by the George Washington University, Washington, D. C.

Born in Worcester, Massachusetts, on April 21, 1892, Dr. Overholser received the degree of Bachelor of Arts (cum laude) from Harvard University in 1912 and Doctor of Medicine from Boston University in 1916. In 1940, he was granted the honorary degree of Doctor of Science by Boston University, and in 1955 an honorary Doctorate of Humane Letters from St. Bonaventure University. He is a Diplomate of the American Board of Psychiatry.

After his period as resident physician at the Evans Memorial Hospital in Boston, he entered the Massachusetts State Hospital Service in 1917, remaining until 1936. During that period, he was absent on military leave from February, 1918, to June, 1919, serving in the United States and in France as a psychiatrist in the Medical Corps of the United States Army. While in the Massachusetts State Hospital Service, he was on the staff of several institutions and in 1924 became Assistant to the Commissioner of Mental Diseases of the State. He was Director of the division for the examination of prisoners of the Department of Mental Diseases of the Commonwealth of Massachusetts from 1925 to 1930, Assistant Commissioner from 1930 to 1934, and Commissioner of Mental Diseases from 1934 to December, 1936.

In 1937, Dr. Overholser was selected from a national roster prepared by the American Psychiatric Association for the position of Superintendent of Saint Elizabeths, and he is still serving in this capacity. From 1938 to 1959 he was Professor of Psychiatry at the George Washington School of Medicine. Since 1959 he has been Professor Emeritus.

Always a prolific writer, Dr. Overholser has had more than 250 articles published in legal and medical journals related to general and forensic psychiatry, criminology, and mental hospital administration. He is the author of *The Psychiatrist and the Law* (1953) and editor of *Centennial Papers Saint Elizabeths Hospital 1855-1955*. With W. V. Richmond, he is coauthor of *Handbook of Psychiatry* (1947). As Editor-in-Chief of the *Quarterly Review of Psychiatry and Neurology*, Dr. Overholser has expanded the scope of the journal so that it is now one of the more comprehensive review publications. He is a member of the Editorial Board of *MD*, the medical newsmagazine.

Casanova, Then and Now*

Félix Martí-Ibáñez, M.D.

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EDITOR-IN-CHIEF OF MD, THE MEDICAL NEWSMAGAZINE
NEW YORK, N. Y.

The current issue of *MD* is devoted to the study of sex, next to hunger the driving force in life. It is proper therefore to recall that unique incarnation of *homo eroticus*, Giovanni Jacopo Casanova.

The fame of Casanova, one of the most interesting specimens of humanity, derives from his having purposely led a purposeless life, while remaining constantly true to his chosen destiny as a professional lover. A Venetian of Spanish origin, Casanova in the space of thirty years, from the age of 15 to 45, "knew" more than one hundred women in the Biblical sense of the word, which makes him a marathon winner in the Olympic games of love-making. In his old age, when "no longer capable of acting the god in the garden and the satyr in the shrubbery, he had become a wolf at the dining table," Casanova spent seven years in the chateau of Count Waldstein narrating his bedroom exploits in his *Memoirs*, whose words still ring with song and dance, like a baroque Venetian carnival. Later, he had to be content with only one meal a day and no women, which drove him to make a melancholy reappraisal of dishes—like *olla-podrida*—he could no longer eat, and of women—like Bettina, his first love—he could no longer love.

One hundred sixty years after his death, Casanova still fascinates us, perhaps because all men fall into three groups: those who think they could be Casanovas; those who think they have been Casanovas; and those who think they could have been had they only taken the trouble. The myth of Don Juan, the man who spends his life seducing women, is eminently Spanish, but, like the Don Quixote myth, it has become universal and eternal, and its roots can be found in Ovid, Machiavelli, Tirso de Molina, Molière, Mozart, Dumas, and Shaw.

In Spain—cradle of the myth of Don Juan, and of its antithesis, the pure and romantic Don Quixote—Don Juan was an antisocial rebel and polygamist, perpetually in conflict with God and the state, an epitome of the cherished Spanish dream of everyone doing whatever he well pleased.

Casanova had neither Aladdin's lamp nor the houris of paradise, but his indestructible energy won him the treasure cave and an ever-changing harem of odalisques. He lived to love, and he loved to live. Pushkin, Byron, Alfred de Musset, Benjamin Constant, all were Don Juans in real life; but of all philanderers-extraordinary the most outstanding example was Casanova. And yet he cannot be considered a typical Don Juan, for he lacked the sentimental and spiritual components,

* Abridged versions of these editorials originally appeared in *MD*, the medical newsmagazine. "Casanova, Then and Now" was published in June, 1960, *MD;* "The Cross and the Eagle," in July, 1960, *MD.*

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the religious piety and scruples, that ultimately drove Don Juan to repent and won him a pious burial beneath a crimson rosebush in lovely Seville.

As physicians, we should find interesting Casanova's physique. He was ugly but interesting in appearance, with olive complexion and with piercing eyes. Thus he is portrayed in the painting by his brother, extant at the Daschoff Collection in Leningrad. He had a large nose, often a sign of great sexual capacity; but he was also extremely tall and had a receding mandibula. Paradoxically, gigantism and maxillary hypoplasia are characteristics of a eunuchoid morphology, just as the opposite—short height and a prognathous mandibula—is characteristic of the hypergenital type, symbolized by the satyrs in Mythology.

The portraits of Don Juan by Murillo and Elias Salaverria reveal also a slightly effeminate figure. Casanova had a tenor voice, which, whether in Don Juans or crooners, has always attracted women, particularly intersexuals, because of its enigmatic ambiguity, just as Carmen's deep contralto voice attracted men with a weak personality. Casanova's hand gestures were brilliant yet vain, and always endeavored to suggest his sexual assets. He loved to dress in rich velvets and flashing jewels and was always impeccably groomed, an important detail, since the more undifferentiated a man's personality is, the more overfastidious is his apparel. He suffered countless venereal complaints, which he "cured" as best he could; but his energy was imperishable, as evidenced by his amatory exploits, his escape from *Il Piombi* in Venice, and his ability to write for fourteen hours a day, or play cards for forty-two hours at a stretch.

Casanova always took extreme pains to enter a town with great pomp and ceremony. The townspeople had to be impressed and the ground paved for his amatory conquests. He always protected himself against the dangers of a single love (to love only once, for some men, is always too long) by seducing several women at the same time. He found it easier to be the mediocre lover of many women than the perfect lover of only one.

Casanova was not the kind of Don Juan who when young is forever lovesick or skirt-crazy, and when old is pleasure hungry or a glutton. Nor was he a sentimental Don Juan, like Goethe. As he himself admits in his *Memoirs*, love to him was a profession and a way of life. He was also a professional gambler. Gambling and Donjuanism nearly always go together. A Don Juan's erotic victories are as irrational and capricious as a gambler's victories at the gaming table. Besides, gambling to Casanova was imperative, for without money the road is hard for the professional lover. Casanova was also a medical quack, making up with verbosity for his lack of basic knowledge. But what he most excelled in was the art of love, graduating *honoris causa* in his self-created university of love.

What was Casanova's secret? His technique, which can be studied in the four thousand pages of his *Memoirs*, was an almost scientific application of various psychological principles to the chasing of women. A born psychologist, Casanova exploited the ambivalent feeling of admiration-hate in the men whose women he stole. For this they hated him, but they also admired him for being what they themselves secretly wished to be: the man who by conquering and abandoning women takes revenge for the slights inflicted by women on all other men. Casanova also exploited

feminine resentment against men. In allowing themselves to be seduced by the Venetian adventurer, women, even those who apparently despised him, unconsciously found revenge from the other men who had subdued, spurned, or forsaken them.

Casanova mobilized all these favorable psychological forces by availing himself of various resources to create the myth of his amorous prowess. His erotic prestige with women was due above all to the impression he strove to make among men. In every town he visited, the first thing he did was to compel male admiration, knowing full well the repercussion this would have on the women. He assiduously cultivated the great men of his time, including Voltaire and Haller. Gold, power, mystery, these were the main weapons of Casanova.

Another clue to his successes is the type of women he attracted. No woman of sterling feminine qualities did the Venetian ever clasp in his arms in the thousand and one nights of love in his life, but only epicene types, lacking in distinct personality, pretty women with bored souls, women generally avoided or neglected by normal men, who find less-attractive and even ugly women more interesting and complex.

Casanova pandered to the female ego by simulating a great respect for it, while in fact he had no interest whatsoever in it. We men, more so than women, nurture a secret "ideal woman," within which we usually frame the beloved, while completely ignoring her own ideal. We want to possess her soul by locking it in the framework of our life, by imprisoning it in our dreams, while her own dreams mean nothing to us. Amazingly, women do not fight against this pattern. Casanova never fell in love; he therefore never interfered with a woman's inner self or dreams, which he was incapable of understanding. Hence the reason women found Casanova "different." They failed to realize that this was positive proof that he was not in love with them.

To his technique of first arousing the admiration of the men—family, husband, fiancé, male friends—surrounding the woman he had marked down for conquest, Casanova added two other weapons, which even today would assure any man of success were they not precluded by our way of life. First, he dressed his promises in burning emotion. Not only did he swear eternal love and everlasting marriage to all his women, but he did so on bended knees, with tears streaming down his face, which he wiped off in the folds of the skirt of the overwhelmed victim. Few could resist such blandishments, just as a century and a half later few could resist the Italian poet Gabriele D'Annunzio. When they resisted, he displayed his colossal audacity (always a characteristic of the professional seducer), rushing them into his embrace with passionate advances.

His other weapon was time. Neither clock nor calendar meant anything to Casanova when he laid siege to a new damsel. Time and space do not exist in his *Memoirs*. The clock was only a reminder of the hour of assignation; and space, that is, scenery or background, had no significance. An erotic adventure occupied his pen throughout multiple pages, but not a single line did he ever devote to the landscape, witness of his escapades, though, like all Don Juans, he traveled extensively. In fact, his cosmopolitanism, which ensured an endless change of women and en-

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vironment, was another of his weapons. With his astonishing contempt for time and space, concentrating solely, whether for a day or a year, on his current quarry, few women among the sheltered ladies of Venice, the dressmakers of Turin, the nymphs of Chaillot and of the *grands boulevards* of Paris, the *Frauleins* of Vienna, the courtesans of England could resist the man who made them feel desired above all things, who showed them that nothing existed or mattered besides his love for them.

After all these years Casanova has not yet been subjected to the clinical autopsy he deserves, which I hope some day to make. His morphology does in fact reveal a great deal. His dark complexion, his great height, his receding lower mandibula and eunuchoid features, indicative of low sexual potency and sterility (only a few and unconfirmed cases of paternity are mentioned in his *Memoirs*), are as revealing in the biological sense as his narcissism, irreligiosity, antisocial tendencies, indifference to his mistresses, sexual cynicism, exhibitionism, and typically schizo-manic, sexual-psychopathic aggressiveness are in the psychological sense.

Casanova's psychobiological autopsy would probably reveal, paradoxically, a man of limited sexual potency, who made of his mistresses friends, just as Don Juan turned his friends into mistresses; who did not choose love, but was chosen by love; who loved with that same fury of the autumnal woman who catches each affair as a commuter catches the last train. A man who chose especially not very intelligent, unfeminine, young girls; who made love in public, deliberately making an exhibition of himself, in contrast to normal love-making, which is more modest and discreet; who accepted the love of protective often elderly women; who instead of working and struggling, as most men do, preferred not to toil and made love to women instead. Was not victory in this pursuit so much easier? This giant with maxillary hypoplasia, with a penchant for mendacity (a sign of sexual weakness), was sexually immature and as unspecific to the women who accepted his love as they were to him.

Why is Casanova's figure so fascinating? Perhaps because his *Memoirs* is the most picturesque book of the eighteenth century; because he was not tragic, like Don Juan, but gave pleasure to every woman who knew him, a pleasure that sprang not from his amatory powers but from his supreme skill in satisfying woman's peripheral amorous proclivities and vanity; because to a certain extent he was as faithful to the destiny of professional lover he designed for himself as a mystic is to his chosen faith.

Unlike a normal lover, Casanova was incapable of jealousy or gloom. He created his own erotic propaganda. He made not of work but of sex, not of competing in work with other men but of seducing women, his profession. His treasure chest was crammed with women, women without quality. His sexual promiscuity betrayed his low masculinity, for the man who has known many women, or the woman who has known many men, like some film stars or playboys of today, merely proves that he exerts an attraction on many but can hold none. Nowadays, when the telephone has taken the place of the love letter and telegrams and flowers replace the love ballad, when we live fighting the clock and the calendar and fear to display our emotions, Casanova could not exist.

To us physicians Casanova is as worthy of study as is an exceptional clinical case,

for his life is a review of the foibles, vices, and deceits of the eighteenth century. He is also of interest to us because, by contrast, he makes us realize the joy there is in loving only one woman, which he himself could never do. And yet . . .

Voltaire once told Casanova that they should both respect Albrecht von Haller as the greatest medical figure of the eighteenth century. Casanova replied that though Voltaire had a high opinion of Haller, the latter had a very poor one of Voltaire. To which Voltaire replied: "Perhaps we are both wrong." Perhaps *we* are wrong in thinking of Casanova as merely an erotic rascal and in underestimating all the forms of love.—*Félix Martí-Ibáñez, M.D.*

The Epic of Medicine (VII)

THE CROSS AND THE EAGLE*

(Monastic and University Medicine, 1096-1453)

Through the bloody dust stirred up by the medieval wars, over which still hovered the shadows of the Christian Cross and the old pagan eagle-like symbols of conflicting civilizations, a new type of man was emerging—a man forever on the defensive, eternally tortured by the terrors of the beyond, by the fear of God in heaven and of devils and plagues on earth.

For a thousand years medieval man had lived in perpetual conflict with God, with the world, and with himself. Ravenous for knowledge, he crowded into the public squares to listen to the golden words of Albertus Magnus, Abelard, Duns Scotus, or St. Thomas Aquinas. Obsessed with saving his soul, he neglected his malodorous body, concealing it with voluminous garments, heavy perfumes, and architectonic wigs. Burning with sexual desire, brutal and gluttonous in his pleasures, mystical and romantic in his deeds, rebellious against the law and enslaved to classical dogma, believing, under the spell of astrology and alchemy, that invisible zodiacal-magical filaments connected men, stars, and matter, fear and faith were the opposite poles of his soul. He sought refuge in the love of God, in the collective security of medieval cities—where everything, including disease, was collective—and in the perpetual imperative of action, from tournaments and single combats to the gigantic collective adventure of the Crusades. He exchanged the celestial bodies of astronomy for the cabalistic signs and symbols of astrology, and the test tube of the chemist for the crucible of the alchemist. But he also created masterpieces. He built the Gothic cathedrals, soaring hymns in stone, skyrockets of granite and glass, with rainbowed windows, illuminated missals, and statues and paintings that extolled, to literate and illiterate alike, his world of allegory and symbolism. He wrote the *Divina Commedia*, immortalizing through Dante's lips his own spirit and deeds. And—perhaps his greatest claim to glory—he was the first to create, on a vast scale, uni-

* This editorial is the seventh of a series of twelve presenting a philosophical outline of the history of Medicine.

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versities, a public health system, and hospitals. From such as he sprang the modern European man.

The medieval cathedrals were, so to speak, centers of entertainment and instruction, whither flocked the pilgrims to pass long days huddled around the still time-untouched dazzling white walls, gazing in wonder at the stained glass windows (their equivalent to our electronic newsboards, just as the religious processions with their pomp and pageantry were their cinema and television), whereon were recorded in jewel-toned colors the news, stories, biographies, and even technical advances of the period.

Medieval medicine was faced with the problem of "collective" diseases (plagues, leprosy, dancing mania), inherent to an age that was collective itself, just as it was faced with "individual" diseases (syphilis) in the individualistic Renaissance. Symbolically, the Middle Ages began and ended with terrible pandemics: leprosy, which made of its victims, with their gray sackcloth, peaked hood, and sinister rattle, the most dreaded of phantoms; and the Black Death, which killed the majority of lepers but also a quarter of the population of Europe, causing some 43 million deaths, spreading over the entire planet through maritime and caravan routes. Among its social consequences, it dealt the deathblow to feudalism, increased the value of labor by making laborers scarce, and caused loss of faith in the Church and priests by showing that they died like anyone else, which helped to spread the Reformation. Ironically enough, the Black Death inspired a cynical and irreverent Florentine to write the immortal *Decameron*.

The collectivistic characteristics of the Middle Ages partly determined that medieval medicine should be monastic. Medieval man sought protection and safety in the anonymity of either huge armies, like the Crusades, or monasteries. Located on the main routes traversed either by foot or on horseback by all travelers, the monasteries were at once inn, refuge, hospital, news agency, and nerve center of medieval life. Here a handful of dedicated men toiled to learn the new universal language, Latin, which for a thousand years would replace Greek, already supplanted by Arabic in the Islamic world. In these monasteries study and calligraphy were made paths to heaven. Knowledge became for the Church the means of consolidating its power and authority. Thus clerics came to study, among other things, medicine. Sickness became a divine punishment, and repentance a prerequisite for its cure, with the medical arsenal including relics, rituals, scapulars, and prayers. Medical aid was free until the High Middle Ages, when medicine for the first time became a profession commanding remuneration.

Monastic medicine coincided with Romanesque art, man being then subservient to the Church militant, even as, later, the medicine of Salerno coincided with Gothic art, and the birth of nationalities at this time, together with the rise of the universities, threatened the Church's medical monopoly. The state of mind of the peoples of both periods was reflected in their architecture: in the former, it comprised fortress-like, squat and square and windowless, granite carapaces that provided collective shelter against individual fears, while in the latter it soared into spiraling towers, symbols of alertness and power.

The monk-physicians accepted the Hippocratic doctrine of the four humors and

the correlation between the macro- and the microcosm. Therapy was based on the polypharmacy, bloodletting, cupping, baths, emetics, purgatives, and diuretics described in the antidotaries and herbals, basis of all monastic medical knowledge. To be a physician one first had to be ordained a priest, though monks practiced medicine only in the monasteries.

Theurgic therapy, based on saints' miracles and magic herbs, had its first center in the monastery of Monte Cassino, founded in 529 by St. Benedict of Nursia on the ruins of a temple of Apollo, and the model for future "cathedral-schools." The monks at Monte Cassino practiced religious psychotherapy and physiotherapy, and devoted much time to copying classical medical texts. There the monk Cassiodorus combined classical Greco-Latin and Christian thought, and Greek formularies and compilations were translated into Latin. More a vast medical library and general teaching center than a genuine medical school, Monte Cassino was the cradle of western *religious* medicine. A mass of stone atop a hill near Naples, often sacked during the centuries and finally destroyed in World War II, Monte Cassino had its golden age in the eleventh century. The moving spirit of its medicine was Constantine the African, a mysterious physician disguised as a Benedictine monk, who studied medicine and magic in Babylon. He translated into Latin the works of the Arabian, Jewish, and Greco-Roman physicians, especially Galen, and his translations initiated the lay emancipation of medicine and formed a bridge between Monte Cassino and Salerno.

Some 125 miles from Monte Cassino, on the azure Tyrrhenian Sea, was Salerno, an ancient Greek colony. The School of Salerno, created as a *civitas Hippocratica*, three centuries after Monte Cassino, by a group of students organized in a *universitas*, and a group of physicians composing a faculty, was the oldest center of *lay* medical instruction and the first school to confer diplomas and the title of doctor.

Supported by neighboring Benedictine monasteries, Salerno combined Greek, Latin, Jewish, and Arabian cultures. In Salerno, though most of the teachers were clerics, medicine was taught freely, even by women physicians like Trotula, the "Dame Trot" of popular tales, and became emancipated from the clergy. There anatomy was taught, though only pigs were dissected; there the first medieval pharmacopoeia was compiled, and surgery, practiced often on the mangled bodies of returning Crusaders, made progress. In Salerno was written the most famous hexameter poem of popular medicine in history, the *Regimen sanitatis Salernitanum*, later attributed to Arnold of Villanova. Nearly a thousand editions were published of this work, which recommended diet, exercise, herbs, drugs, rest, and recreation. And in Salerno, disease was regarded as arising from natural causes and not as a divine punishment, astrology and magic were rejected, and the path was opened that would lead to the medieval universities.

The universities crystallized the passionate desire for knowledge that permeated medieval Europe. The center of knowledge changed with political power, passing from Salerno to Bologna, to Paris, to Montpellier, Oxford, Cambridge, and Padua. Physicians were still "book doctors," more philosophers than clinicians, for their clinic was the library, although already in the fourteenth century genuine clinical histories were being written, such as the famous *concilia* of Padua and Bologna.

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Horror of blood made the Church abandon surgery to barbers, executioners, and quacks. The *universitates*, or free associations of students, attired either in full cloaks and tabards or clerical habit and tonsure, finally originated more than eighty universities in Europe. Students led a hard and difficult life, constantly threatened by hunger, cold, and other discomforts, but at the same time they were gay and given to wild pranks that often ended in bloodshed.

The University of Bologna was governed by lay students (whereas Paris University was governed by the masters), and the streets of Bologna often rang with festive graduation processions, with much beating of drums and waving of banners. Luminaries at Bologna were the surgeon of the Crusades, Ugo de Lucca; his son Theodoric, who used a soporific sponge soaked in opium and mandragora; William of Saliceto, who substituted the cautery for the knife; Taddeo Alderotti, immortalized by Dante and creator of the *concilia;* and the astronomer Copernicus, whose thinking revolutionized the whole universe. Bologna witnessed perhaps the first autopsy in history (1281) and made great advance in anatomy under Mondino, the first man to dissect a human body in public, whose *Anathomia* was the basic anatomy textbook for three centuries.

A group of students from Bologna founded the school of Montpellier (1208), whose roster of students included such illustrious names as Arnold of Villanova, physician to popes and kings, the most extraordinary figure in medieval medicine, possibly the author of some of the first hundred medical books printed in Europe, advocate of wine in therapeutics, and defender of naturalistic observation against the magic and dogma of the Inquisition; the Franciscan Ramón Lull, who in the shade of the tortured olive trees of Majorca wove his immortal philosophies; Bernard de Gordon, whose work made perhaps the earliest mention of reading glasses; and the magnificent Guy de Chauliac, whose textbook on surgery was the most authoritative until the eighteenth century.

The school of Paris was founded by Peter Abelard. Its students had to remain unmarried on pain of losing their title of doctor. Paris was illumined by the greatest genius of the thirteenth century, Albertus Magnus, *Doctor Universalis*, the most learned man of the Middle Ages, master to St. Thomas Aquinas, to Roger Bacon, and to the only physician to become Pope, Petrus Hispanus. Such was the fame of Albertus Magnus that he had to teach in the open in order to accommodate the thousands of students who flocked to listen to him. His work marked the beginning of experimental medicine. Outstanding too were the surgeons Lanfranchi of Milan, Jan Yperman, father of Flemish surgery, and Henri de Mondeville, whose observations on the qualitative change in the humors added a new dimension to the humoral doctrine.

The school of Oxford sprang from that of Paris. A school of clerics governed by masters, mother of the liberal and naturalistic school of Cambridge, it sheltered the mysterious Michael Scot, physician and magician; the Franciscan Bartholomaeus Anglicus, author of the most popular encyclopedia of medieval medicine; the *doctor mirabilis*, Roger Bacon, the first modern scientist, defender of experimentation against dogma, who described the magnetic needle, gunpowder, and reading glasses, and predicted radiology, the discovery of America, the airplane, the steamship, and

television; and John Gaddesden, author of the *Rosa Anglica*, a book divided into five parts, like the petals of a rose, and immortalized in Chaucer's *Canterbury Tales*.

Daughter of Bologna, the school of Padua, where the student was lord and master, was an isle of liberalism under the protection of the fair Venice. In Padua, the illustrious Pietro d'Abano, an Averröist philosopher, used the "dry" aseptic technique to treat wounds and reconciled Arabian medicine and speculative philosophy. Accused of practicing magic, d'Abano was burned at the stake.

All the universities, especially that of Montpellier, were fertilized by the cultural stream from Toledo's school of translators, where Christians and Jews happily fraternized and a new type of medieval scholastic physician was born, a doctor-cleric crammed with book knowledge and dialectic and highly versed in Latin, the *lingua franca* of educated men.

Set by their office above all manual labor, physicians eschewed surgery, which was practiced chiefly by barber-surgeons, with scarcely any preliminary technical training, and by empirical barbers, bloodletters, and executioners. This occasioned countless conflicts between the "long-robed" surgeons (schoolmen and clerics) and the "short-robed" empirics. Surgery used tampons, cautery, sutures, and the soporific sponge.

Medieval art attained its highest form of expression in illuminated medical manuscripts and miniatures of daily life. Animals and flowers gradually replaced the earlier figures of kings and emperors. Herbals, luminous with colored pigments and gold, supplemented the popular botanical gardens of the friars, whose herbs Charlemagne called "friends of the physician and the cook."

Other healing practices coexisted with university medicine, such as the healing miracles of patron saints, like St. Sebastian and St. Roch, and the "Royal Touch," healing performed by a mere touch from the hand of a king. Medieval medical concepts were Galenic; the dominant pathology was humoral and pneumatic; diagnosis was based on the symptomatology and examination of the patient, especially of his pulse and urine. At the same time *pronoia*, the art of divining disease without questioning the patient, was practiced, and dreams were studied. Uroscopy, immortalized in medieval paintings, was the supreme diagnostic tool, for the golden liquid, believed to be filtered from the four organic humors, was revered; it was sent to the physician in flasks cradled in straw baskets like a noble old wine, and the physician, as portrayed in paintings, studied it with pensive eyes. Therapy employed phlebotomy, exutories, cathartic treatments by means of clysters, cupping, emetics and purgatives, symptomatic polypharmacy, and many fantastic remedies.

The medical man, who was first physicus and then doctor, became a professional when his services were at last remunerated, but hospitals continued to be little more than refuges for invalids.

Weird diseases prevailed, such as the epidemic of flagellants, who scourged themselves to the sound of bells; and the dancing mania, exorcised by the church and depicted on canvas by Brueghel, called in Italy tarantism, collective social phenomena revealing of the prevailing psychic contagion.

Belief in magic and demons flourished, and so did the use of amulets, gems, bezoars, and saints' relics, the doctrine of astrological signatures, and miraculous

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nostrums, the belief in incubi and succubi, fairies and gnomes, flying witches, demonic possession, and visions of the witches' sabbath, Ptolemaic astrology, and the signs of the zodiac. The addition of faith and prayers to these "curative" resources marked the change from natural to Christian magic.

Medieval medicine, via Arabian medicine and the European universities, preserved and passed down Greek medical thought. Worthy of admiration are the men who, though surrounded by a hostile and violent world, strove indefatigably to kindle the dawn in the medieval night. It was night, but night illuminated by Gothic cathedrals, musical with the verses of Dante and the discourses of Albertus Magnus, tempestuous with students at the universities, ablaze with the passionate adventure of the Crusades, and redeemed by medieval man's longing to set the barren desert of his soul abloom with the roses of his faith in the future.—*Félix Martí-Ibáñez, M.D.*

AHA Receives Record Contributions During 1959

The American Heart Association has announced that the public contributed a record $24,004,865 during 1959 to support its research and charitable activities and attributed the increase to the growing awareness people have about the prevalence of heart disease, the leading cause of death in this country. The American Heart Association had been forced to postpone important research, in recent years, due to lack of funds, and some of this work can now be started.

The New Illustrated Medical Encyclopedia for Home Use: A Practical Guide to Good Health. COMPILED AND EDITED BY ROBERT E. ROTHENBERG, M.D., F.A.C.S. New York, Abradale Press, 1959. 4 vol., boxed. Pp. 1454. Price $50.00.

This handsome four-volume set is a monumental work, an achievement of great value and interest for the lay public. Profusely illustrated and beautifully designed, the encyclopedia is a credit to the publisher, Abradale Press, the editor, Dr. Robert E. Rothenberg, and the editorial staff of 18 physicians and surgeons.

More than 7500 questions and answers pertaining to all branches of medicine and surgery are included in these volumes. Each chapter is written by a qualified specialist who has compiled the questions asked most often by his patients and answered them in easily understood, nontechnical language. Topics covered range from specific disease processes to organs of the body in healthy and diseased states to less usual subjects such as alcoholism, child behavior, and infant feeding and bowel function.

Numerous special and unusual features are included in this outstanding set of books. To mention just a few: a detailed mannikin in natural colors identifying more than 300 parts of the human anatomy, valuable charts of communicable diseases, immunization charts, more than 10 diets for various conditions, a thorough listing of definitions of medical terms. Also included is a helpful section on emergency first aid, printed on colored paper for easy reference.

Each volume is individually indexed and volume 4 includes a complete index of the entire set. The table of contents is also arranged for the reader's convenience.

The editor is careful to warn readers of the encyclopedia that it is not intended as a guide for self-treatment and that a physician should be consulted for disorders requiring individual examination and treatment.

This encyclopedia is an outstanding compilation, well edited, beautifully printed and designed, and in every respect a truly remarkable achievement.

The Heinz Handbook of Nutrition. EDITED BY BENJAMIN BURTON. New York, McGraw-Hill Book Company, Inc., 1959. Price $5 75.

This volume is a practical reference manual on human nutrition in health and disease for physicians, nutritionists, dietitians, nurses, and home economists. It is concise and authoritative and is written with a clarity of expression and in a style that makes it valuable to the professional person and also as a textbook in schools of medicine, public health, and nursing and in university courses on nutrition and dietetics. The book also has appeal for the interested, intelligent layman. The subject matter ranges from the basic physiology and biochemistry of food intake and utilization to the psychology of appetite; from infant nutrition to postoperative diets; and from fluid therapy or the etiology of celiac disease to food allergy. The various chapters cover a variety of subjects including diet in gall bladder disease,

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the relationship between nutrition and degenerative diseases, the biochemistry of essential nutrients and their metabolic interrelationships, disaster feeding, food toxicology, public health nutrition. Particular attention is paid to the therapeutic and preventive aspects of nutrition in the management of specific diseases—including detailed outlines and sample menus for all accepted therapeutic diets.

The Heinz Handbook of Nutrition represents the consensus of contemporary scientific and clinical thought and avoids speculation or repetition of redundant historical developments. This work summarizes up-to-date, accepted information in a concise manner, mentioning briefly work still in the experimental phase. Practical sample diets, charts, and extensive tabular material are included in this volume, thus placing valuable information at the fingertips of the busy practitioner.—*I. Newton Kugelmass, M.D.*

A Bibliography of Internal Medicine: Communicable Diseases. ARTHUR L. BLOOMFIELD, M.D. Chicago, The University of Chicago Press, 1958. Pp. 560. Price $10.00.

The author of this fascinating book has an important thesis: He believes that we must understand the development of ideas in medicine historically, as well as in the light of the newest advances, and he feels that too often this historical approach is neglected. In an attempt to stimulate interest in the events that led to modern medical knowledge, he prepared these bibliographies of 30 communicable diseases. For each disease he has written excellent abstracts of the most important literature, covering every major development in understanding and treatment of the disease—from the earliest notation (usually in the eighteenth or nineteenth century) until the present.

Thus each of the 30 bibliographies is actually a fascinating history of the development of a disease—typhoid fever, cholera, bacillary dysentery, plague, etc. The abstracts are written in a very interesting style that cannot fail to hold the attention of every medical student and physician, and the book should certainly succeed in stimulating interest in the historical development of disease and in obviating the "danger that we shall become completely cut off from our medical past and relapse into a sort of modern Dark Age."

Conquering Your Allergy. BOEN SWINNY, M.D. New York, Fleet Publishing Corporation, 1959. Pp. 221. Price $3.95.

As may be understood from its title, this book is intended for the layman, especially for the millions of persons with some type of allergy. The author, a well-known specialist in allergy, has included in his book a superficial survey of all types of allergy and of usual methods of managing allergic symptoms. The book includes chapters on the nature of allergy, the allergen, susceptible areas, and the allergist.

Unfortunately, this book is not likely to appeal to the lay reader because it has been greatly written down and oversimplified. Use of slang expressions, simplification of sentence structure, inclusion of only the most superficial information, and an uninteresting format will be obvious to the reader, who may conclude that if he is to learn more about allergy it will not be from this book.

Diseases of Medical Progress: A Survey of Diseases and Syndromes Unintentionally Induced as the Result of Properly Indicated, Widely-accepted Therapeutic Procedures. ROBERT H. MOSER, B.S., M.D. Springfield, Ill., Charles C Thomas, 1959. Pp. 131. Price $4.75.

Although this book is intended to be a survey of diseases and syndromes unintentionally induced as the result of accepted therapeutic procedures, it is actually no more than an organized review of the literature on such diseases. In 14 sections, each devoted to a group of induced diseases—e.g., antibiotic induced, cardiac, gastrointestinal, hormone induced, metabolic—the author correlates the findings reported in his 707-item bibliography, enumerating but not analyzing each syndrome.

Very few exact data are cited concerning how induced diseases may be avoided or how they are best handled, when they occur. Thus, in the chapter on antibiotic-induced diseases, one paragraph is devoted to vitamin K and B complex deficiencies: "Destruction of colon bacilli engaged in the synthesis of K and B complex vitamins by prolonged antibiotic therapy has been described. A case of clinical pellagra associated with pulmonary moniliasis occurring in a chlortetracycline-treated, elderly woman has been reported." Since there is no mention even of dosage, much less of other pertinent factors, how much practical value would this have for the physician confronted with a similar case?

The problem of induced diseases, "diseases of medical progress," is becoming increasingly widespread with the use, often indiscriminate, of new antibiotics, ataraxics, and other neoteric therapies. It is a problem that needs broad examination, rather than a superficial review of the literature such as this book comprises.

Medieval and Renaissance Medicine. BENJAMIN LEE GORDON, M.D., F.I.C.S. New York, Philosophical Library, Inc., 1959. Pp. 843. Price $10.00.

This history of medieval and Renaissance medicine is a fascinating compendium of medical precept, folklore, and superstition, a review of diseases, therapeutics, medical knowledge and of biographies of the major and less well known medical figures of these periods.

The Middle Ages represented, according to the author, a virtual "intellectual vacuum," and the field of medicine was no exception. The author discusses the various factors in this stagnation—continuous wars, famine, pestilence, epidemics, plagues, and, of course, political and religious considerations. Of medieval medicine he concludes, ". . . medieval medicine was the growth of faith in authority which permitted no induction nor experimentation in contradistinction to ancient medicine which was a science of thoughtful observation and experimentation." Thus the history of medicine at this period abounds in superstition rather than scientific fact, in subtle speculation on old knowledge rather than new thought, new methods, or new experiments.

In relating the fascinating story of medieval and Renaissance medicine, the author quotes extensively from the medical, religious, and philosophical literature of the time—e.g., an excellent description of the plague by Rufus of Ephesus and another by Giovanni Boccaccio, author of the *Decameron;* the Code of Physicians and Surgeons formulated by Fredrick II, which lists rules of physicians' education, fees, com-

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pounding of drugs; numerous laws of the Koran pertaining to dietary regulations, marriage rules, sexual matters, cleanliness; a graphic description of the effects of syphilis by Francisco Lopez de Villalobos. The hundreds of interesting descriptions and quotations paint a vivid portrait of the entire period.

One fault of this otherwise noteworthy book lies in the brief treatment of Renaissance medicine as compared with the comprehensive coverage of the medieval period.

The book is thoroughly researched and contains many interesting portraits of famous medieval and Renaissance physicians.

Hypertension: The First Hahnemann Symposium on Hypertensive Disease. EDITED BY JOHN H. MOYER, M.D. Philadelphia and London. W. B. Saunders Company, 1959. Pp. 790. Price $14.00.

This excellent book contains the proceedings of the First Hahnemann Symposium on Hypertensive Disease, held in December, 1958.

The papers, all by eminent authorities, are divided into the following classifications: pathology and clinical aspects of hypertension, basic concepts of the etiology of hypertension, pharmacology of hypertension, therapy of hypertension, and the surgical approach to hypertension.

The emphasis on therapy in this volume should make it particularly valuable to the practicing physician. A number of illuminating discussions are included.

Typography and format of the book are excellent.

Anatomy and Physiology. Volume 2: Urinary, Respiratory, and Nervous Systems, Sensations and Sense Organs, Endocrine and Reproductive Systems. EDWIN B. STEEN, PH.D., AND ASHLEY MONTAGU, PH.D. New York, Barnes & Noble, Inc., 1959. Pp. 314. Price $2.50.

The first volume of this two-volume series was concerned with cells and tissues, integument, skeletal, muscular, and digestive systems, blood, lymph, and the circulatory system. Volume 2 is a review of urinary, respiratory, and nervous systems, sensations and sense organs, endocrine and reproductive systems.

The two volumes are useful student guides for study and review and are a convenient supplement to standard textbooks. Volume 2 is of particular value for students of the biological sciences, nursing, occupational therapy, and physical education.

The Haunting Melody. THEODORE REIK, PH.D. New York, Grove Press Inc., 1960. Price $2.45.

This is a paperback reissue of a hard cover book originally published by Farrar, Straus and Cudahy, Inc., in 1953 and bears the same cryptic reason for its reissue as do all paperbacks, especially since Dr. Reik's original seems to have been read widely and not priced out of ordinary range.

The acceptance of Dr. Reik's argument will, of course, depend on the reader's persuasion. For Freudians and oriented or reconciled non-Freudians, this argument

will be entirely logical, and the apparently sudden neogenesis of a snatch of music will assume the same importance as the dream, the slip of the tongue, the mental block, and free association among the tools of psychoanalysis. Dr. Reik's clinical examples, drawn largely from self-analysis, are good ones and carry their freight well.

The author's erudition, especially his grasp of musicology, is also impressive, but one tires after awhile of his continued self-deprecation as a musicologist. His contribution to the understanding of composer Gustav Mahler in the concluding chapters of the book is as basic as, and certainly more enlightening than, that of most professional musicologists. The detective story that tracks the book's origin through Mahler has its share of suspense and surprise but is, unfortunately, blunted by the author's verbosity. As a matter of fact, the writing in general suffers from an overabundance of words and an echolalia of ideas, made all the more ironic when the author accuses some hapless conductor named Hans Schneider of having the same fault.

Despite the extravagant undergrowth, the book is highly recommended to physicians who appreciate the confraternity of medicine and the arts, particularly music.—*S. J. London, M.D.*

A Biologist in Israel: A Book of Reminiscences. F. S. BODENHEIMER. Jerusalem, Biological Studies, Publishers, 1959. Pp. 492.

In this book, published shortly before his untimely death, Dr. Bodenheimer, the world-renowned entomologist, outlined his lifetime scientific work, which encompassed a monumental series of contributions to entomology, ecology, and biology in general. The author's bibliography comprised more than 400 items, and so important was his work that two genera and more than 30 species of animals were named in his honor during his lifetime, in addition to numerous other citations and awards.

The book, beautifully written and a fascinating narrative, reviews first the author's early life, the story of his choice of profession, and his many years of work in Palestine, both as scientist and in various roles during the establishment of the state of Israel.

The second part of the book is concerned with Dr. Bodenheimer's extensive travels throughout the world. He wrote of the scientists he met, of their work, and of his own observations of the entomology and ecology of these areas.

The bulk of the book deals with Dr. Bodenheimer's countless scientific achievements, primarily in Palestine and Israel. Although his contributions are too numerous to list in their entirety, we may mention just a few: the firm foundation of agricultural entomology in Israel; the establishment of the entire fauna of Palestine (his *Animal Life in Palestine* is still the only work in this field for the entire Middle East); pioneer efforts in population dynamics and physiology of locusts, voles, aphids, honey-bees, and *Drosophila;* publication of three basic works in the history of biology.

Generosity, warmth, and sincerity permeate this scientific autobiography, which was to be the final summing up of a great biologist.

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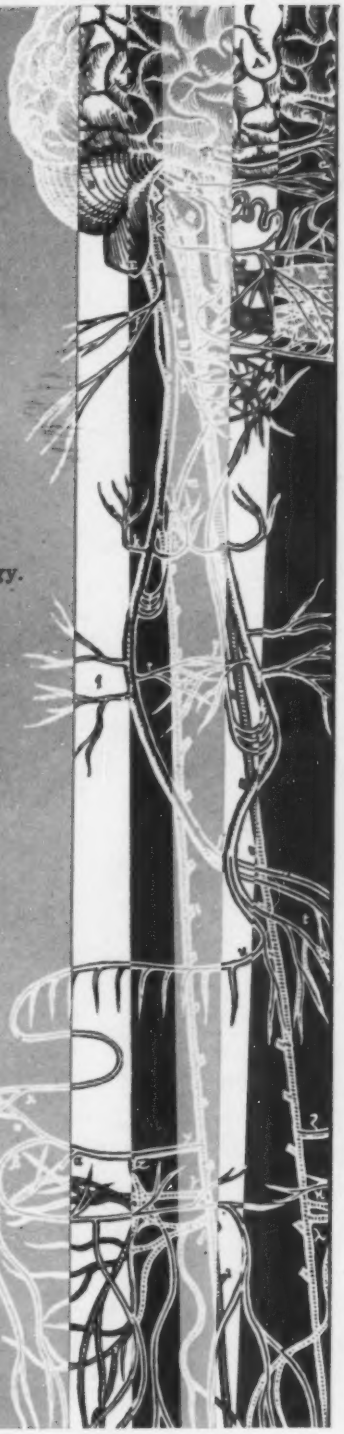
A HISTORY *OF* NEUROLOGY

by Walther Riese, M.D.

Associate Professor of Psychiatry and Neurology; Chairman, Department of the History of Medicine, Medical College of Virginia, Richmond, Virginia
Consulting Neuropathologist to the Department of Mental Hygiene and Hospitals of the Commonwealth of Virginia



Here is a new approach to the history of neurology. With an historian's eye for the dynamic, the author has chosen to focus on "the great and lasting problems" that have remained inherent in man's endeavor through the ages to understand the functions of the nervous system and their disturbances. By concentrating on fact, thought, and theory, Dr. Riese has achieved a comprehensive picture of neurologic progress.

Dr. Riese traces the history of the doctrine of cerebral localization, its scope, limits, and different versions, both past and present. Other sections of special interest include those on the history of diagnosis, prognosis, and therapy in neurology; and a comprehensive treatment of the history of diaschisis or cerebral shock. Also included are invaluable sections: neurological chronology; list of journals specializing in neurology and neurological societies and associations.

This volume is one of a series devoted to the histories of various specialties and facets of medicine. Félix Martí-Ibáñez, M.D., who wrote the foreword to *A History of Neurology*, is the Editorial Director of the series, which includes Public Health and Ophthalmology.

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A New MD Medical History...

A HISTORY *of* OPHTHALMOLOGY

by George E. Arrington, Jr., M.D.

Associate in Ophthalmology, Medical College of Virginia, Richmond, Virginia

A HISTORY OF OPHTHALMOLOGY provides an over-all view of ophthalmological progress through the ages. With scholarship and originality the author traces the thinking, of men known and unknown, that has made possible the technological advances of this science. Man's search for understanding of vision and its preservation is shown effectively in its relation to the history of civilization. The content of this book ranges from the period of prehistorical ophthalmology to the present day. In emphasizing the effect of related sciences, philosophy, and human culture upon ophthalmology, Dr. Arrington offers new insight into his subject. Appropriate attention is given the ascendancy of modern ophthalmology including an evaluation of its current trends in the light of the future. It is a book of interest to ophthalmologists, general practitioners, and students.

This volume is one of a series devoted to the histories of various specialties and facets of medicine. Félix Martí-Ibáñez, M.D., who wrote the foreword to A HISTORY OF OPHTHALMOLOGY, is the Editorial Director of the series, which includes books on Public Health and Neurology.

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